ರಾಜೀವ್ ಗಾಂಧಿ ಆರೋಗ್ಯ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕರ್ನಾಟಕ, ಬೆಂಗಳೂರು
RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES, KARNATAKA, BENGALURU
4th T Block, Jayanagar, Bengaluru – 560 041

No. RGU/AUTH/140-SYN/117-1(DCD)/2018-19 Date. 13.03.2019

NOTIFICATION

Sub : Regulation and Curriculum of DM Paediatric Oncology
Ref : Minutes of 140th Syndicate meeting held on 27.02.2019

* * *

In exercise of the powers conferred under section 35 (1) of RGUHS Act 1994, and as per approval of the Syndicate in its 140th meeting held on 27.02.2019, the Regulation and Curriculum pertaining to DM Paediatric Oncology is notified herewith as per Annexure to this notification.

The above Regulation shall be applicable to the students admitted to the said course during the academic year 2016-17 and onwards.

REGISTRAR

To
The Principals of all affiliated colleges/Institutions conducting Super Specialty Courses

Copy to : -

1. The Secretary to Governor, Governor's Secretariat, Raj Bhavan, Bangalore- 560 001
2. Secretary to Government, Health & Family Welfare Department (Medical Education) Vikasa Soudha, Bangalore- 560 001
3. The Director, Department of Medical Education, Ananda Rao Circle, Bangalore- 560 009
4. Members of Senate/Syndicate/Academic Council
5. PA to Vice-Chancellor/Registrar/Registrar (Evaluation), RGUHS
6. Public Information Officer, RGUHS
7. The Home page of RGUHS website –http://www.rguhs.ac.in Authority Section/Fellowship.html
8. Guard file/Office Copy.

REGULATION AND CURRICULUM FOR

DM PAEDIATRIC ONCOLOGY

RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES, KARNATAKA

4TH 'T' BLOCK, JAYANAGAR, BANGALORE- 560 041

REGULATION AND CURRICULUM FOR

D. M. PEDIATRIC ONCOLOGY

(Annexure to University Notification No. RGU/AUTH/140-SYN/117—I (DCD) 2018-19 Dated 13.03.2019)

Contents

CHAPTER I
REGULATIONS

1. Eligibility for admission

D.M.: Candidate seeking admission for D.M courses in any subject must possess recognised degree of MD (or its equivalent recognised degree) in the subject specified in the regulations of the Medical Council of India from time to time.

2 . Obtaining Eligibility Certificate by the University before making Admission

No candidate shall be admitted for any Super Speciality course unless the candidate has obtained and produced the eligibility certificate issued by the University. The candidate has to make an application to the University with the following documents along with the prescribed fee :

1 MBBS and MD pass / degree certificate issued by the University.
2. Marks cards of all the university examinations passed MBBS course.
3. Attempt Certificate issued by the Principal.
4. Certificate regarding the recognition of the medical college by the Medical Council of India.
5. Completion of internship certificate.
6. In case internship was done in a non-teaching hospital, a certificate from the Medical Council of India that the hospital has been recognised for internship.
7. Registration by any State Medical Council and
8. Proof of SC/ ST or Category I, as the case may be.

Candidates should obtain the Eligibility Certificate before the last date for admission as notified by the University.

A candidate who has been admitted to postgraduate course should register his / her name in the University within a month of admission after paying the registration fee.

3. **Intake of Students:** The intake of students to each course shall be in accordance with the ordinance in this behalf.

4. Duration of Study

The course of study shall be for a period of 3 years consisting of 6 terms.

5. Method of training

The training of postgraduate for DM course shall be residency pattern with graded responsibilities in the management and treatment of patients entrusted to his/her care. The participation of the students in all facets of educational process is essential. Every candidate should take part in seminars, group discussions, grand rounds, case demonstration, clinics, journal review meetings, CPC and clinical meetings. Every candidate should be required to participate in the teaching and training programme of undergraduate students. Training should include involvement in laboratory and experimental work, and research studies. Basic medical sciences students should be posted to allied and relevant clinical departments or institutions. Similarly, clinical subjects' students should be posted to basic medical sciences and allied specialty departments or institutions.

6. **Attendance, Progress and Conduct**

A candidate pursuing DM course should work in the concerned department of the institution for the full period as a full time student. No candidate is permitted to run a clinic/laboratory/nursing home while studying Super Speciality course.

Each year shall be taken as a unit for the purpose of calculating attendance.

Every student shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentation, clinics and lectures during each year as prescribed by the department and not absent himself / herself from work without valid reasons.

Every candidate is required to attend a minimum of 80% of the training during each academic year of the Super Speciality course. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% attendance of training period every year.

Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University Examinations

7 . Monitoring Progress of Studies

7.1 Work diary / Log Book **-** -Every candidate shall maintain a work diary and record of his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. (please see Chapter IV for model checklists and logbook specimen copy). Special mention may be made of the presentations- by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate. The work diary shall be scrutinised and certified by the Head of the Department and Head of the Institution and presented in the university practical/clinical examination.

7.2 Periodic tests:

Incase of courses of three years duration (DM, MCh.), the—concerned departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce. Records and marks obtained in such tests will be maintained by the Head of the Department and sent to the University, when called for.

7.3 Records: Records and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.

8. Schedule of Examination

The examination for D M courses shall be held at the end of three years. The university shall conduct two examinations in a year at an interval of four to six months between the two examination. Not more than two examinations shall be conducted in an academic year

9. Scheme of Examination: D M:

The examination shall consist of theory, clinical/practical and viva voce examination.

***9.1 (Theory) (Written Examination)*:** The theory examination shall consist of four question papers, each of three hours duration. Each paper shall carry 100 marks. Out of the four papers, the first paper will be on basic medical sciences. Recent advances may be asked in any or all the papers.

9.2 Practical / Clinical Examination:
In case of practical examination, it should be aimed at assessing competence, skills of techniques and procedures as well as testing student's ability to make relevant and valid observations, interpretence and experimental work relevant to his / her subject.

9.3 In case of clinical examination, it should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine at least one long case and two short cases.

The maximum marks for Practical / Clinical shall be 200.

10 Viva Voce: **Viva** Voce examination shall aim at assessing thoroughly depth of knowledge, logical reasoning, confidence and oral communication skills. The maximum marks shall be 100.
10.1 Examiners: There shall be at least four examiners in each subject. Out of them, two shall be external examiners and two shall be internal examiners. The qualification and teaching experience for appointment as an examiner shall be as laid down by the Medical Council of India.

10.2 Criteria for declaring as pass in University Examination: A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory, (2) Practical including clinical and viva voce examination.

A candidate securing less than 50% of marks as described above shall be declared to have failed in the examination. Failed candidate may appear in any subsequent examination upon payment of fresh fee to the Registrar (Evaluation).

10.3 **Number of Candidates per day D M Course:** The maximum number of candidates for practical/clinical and viva-voce examination shall be maximum of 3 per day

CHAPTER II

GOALS AND GENERAL OBJECTIVES OF POSTGRADUATE MEDICAL EDUCATION PROGRAM

GOAL

The goal of Super Speciality medical education shall be to produce competent specialist and /or Medical teacher:

(i) who shall recognise the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy;

(ii) who shall have mastered most of the competencies, pertaining to the specialty, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system;

(iii) who shall be aware of the contemporary advances and developments in the discipline concerned;

(iv) who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology; and

(v) who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

GENERAL OBJECTIVES

At the end of the Super Speciality training in the discipline concerned the student shall be able to:

(i) Recognise the importance of the concerned specialty in the context of the health need of the community and the national priorities in the health sector.

(ii) Practice the specialty concerned ethically and in step with the principles of primary health care.

(iii) Demonstrate enough understanding of the basic sciences relevant to the concerned specialty.

(iv) Identify social, economic, environmental, biological and emotional determinants of health in each case, and take them into account while planning therapeutic, rehabilitative, preventive and promotive measures/strategies.

(v) Diagnose and manage majority of the conditions in the specialty concerned based on clinical assessment, and appropriately selected and conducted investigations.

(vi) Plan and advise measures for the prevention and rehabilitation of patients suffering from disease and disability related to the specialty.

(vii) Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation.

(viii) Demonstrate empty and humane approach towards patients and their families and exhibit interpersonal behaviour in accordance with the societal norms and expectations.

(ix) Play the assigned role in the implementation of national health programmes, effectively and responsibly.

(x) Organise and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.

(xi) Develop skills as a self-directed learner, recognise continuing educational needs; select and use appropriate learning resources.

(xii) Demonstrate competence in basic concepts of research methodology, epidemiology, and be able to critically analyse relevant published research literature.

(xiii) Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.

(xiv) Function as an effective leader of a health team engaged in health care, research or training.

STATEMENT OF THE COMPETENCIES

Keeping in view the general objectives of Super Speciality training, each discipline shall aim at development of specific competencies, which shall be defined and spelt out in clear terms. Each department shall produce a statement and bring it to the notice of the trainees in the beginning of the programme so that he or she can direct the efforts towards the attainment of these competencies.

COMPONENTS OF THE PG CURRICULUM

The major components of the PG curriculum shall be:

i) Theoretical knowledge
ii) Practical/clinical Skills
iii) Attitudes, including communication.
iv) Training in research methodology.

Source: Medical Council of India, Regulations on postgraduate medical education, 2000.

Annexure to University Notification No: No. UA/ORD-06/1999-2000, dated, 01.01.2000

CHAPTER III

D.M PEDIATRIC ONCOLOGY

Course Description

Goals

The super-specialty course in Paediatric Oncology is intended to produce a well informed and trained Specialist who can take care of children with cancers, understand the needs of the family as a whole while maintaining an acceptable standard in the said discipline. He/She should be academically strong and be able to keep up to date because of rapid changes.

A Paediatric Oncologist is an internist who has undergone additional specialized training. A good Paediatric oncologist is one who applies the thoughtful approach to problem solving. He or she is trained as an internist to a body of knowledge that includes children with cancer. Specific features about individual childhood cancers and their treatments and a reasonable familiarity with the origins, status, and fruits of cancer research at clinical and pre-clinical levels are requisite. More than in many Paediatric specialties, a Paediatric Oncologist interacts with cognate brother and sister disciplines, particularly Paediatric Surgical oncology, Radiation oncology, and Pathology. Multiple other interactions occur with Nursing oncology, Diagnostic radiology, Psycho-oncology, Neuro-oncology, Gynecologic oncology, Rehabilitation Medicine and General Paediatricians as care continues until a child is an young adult. Infectious diseases are common complications of cancers and their treatments, and the parallelism between use of antibiotics and chemo-therapeutic agents forges a natural alliance with specialists in infectious diseases.

Clinical Responsibilities

The Paediatric Oncologist is often involved in the final decisions concerning management and is frequently the final common pathway through which decisions are implemented. The timing of surgery and radiotherapy, the decision on whether to take curative or palliative approaches, and the decision whether watchful waiting is the appropriate approach or if vigorous action is necessary are often entrusted to the Paediatric oncologist by the child's parents. He or she must have knowledge of the natural history of a disease so as to conceptualize the likely future and its optimal organization for a specific patient. In addition to a personal library, selected reprints, and access to computer databases, a Paediatric oncologist is well advised to construct a database of patients seen.

Patients are often influenced by their present state of subjective well being. It is the responsibility of an oncologist to recognize the often-pernicious behavior of cancer in its potential for recurrence and metastasis. In this context, the Paediatric oncologist must interact directly with the child/family as well as with the chart, films, slides, and other critical raw data. Only in such a fashion can advice be tendered with commitment and with the expectation that the patient can be guided to a proper choice. It is unrealistic to expect a patient/family with a neoplasm to make a choice (informed consent) that is dispassionate, since the very fact of having cancer constitutes a serious emotional burden that may distort ordinary reason. By firsthand intimacy with the diagnosis, the extent of the disease, and the patient's attitudes and infirmities, the Paediatric oncologist can make rational recommendations to the patient and to the other physicians involved.

Many of the other physicians who are involved with a particular patient may concentrate in fields other than surgical or radiation oncology. It is not uncommon; indeed it is often the case, that the patient has a primary family physician or a paediatrician who referred the patient to a Paediatric oncologist. In some circumstances, cardiologic, pulmonary, neurologic, or other specialists may already have been involved with the patient prior to the recognition of the neoplastic disease. It is incumbent upon the Paediatric oncologist to recognize their interest and their continuing role in the management of patients with multi-system disease. An infectious disease specialist often becomes involved in the absence of such consultants, however, the Paediatric oncologist must also implement all aspects of General Paediatrics. He or she should be well versed in various diseases, the modalities used in their treatment, the pharmacologic, immunologic, neurologic, psychologic, biochemical, epidemiologic, and molecular biologic aspects of cancers, and the complications that cancers cause. Familiarity with the topics below constitutes a foundation for Paediatric oncology from which the principles derive.

Clinical Research

No cancer is so well treated that an improvement in outcome or therapeutic approach cannot readily be imagined. Thus, research is imperative. Furthermore, therapies that allow preservation of the involved organ are much to be desired, and investigations that have led, in many patients, to organ preservation, limb salvage, bladder conservation, and avoidance of abdomino-perineal resection are major dividends in the treatment of cancers in these organs. Although in these instances it would appear self-evident, measuring the quality of life is now quantitatively valid and has added a major opportunity to each value judgment. Every established paradigm of Paediatric oncologic management arose from some investigative effort. In many instances, these were one-armed studies that were so successful they became adopted.

Every oncologist's office should be a research station. Every oncologist during his or her training was exposed to, and almost always was a participant in, clinical research. Virtually no regimen or treatment for any tumor is entirely satisfactory. There is much reason to anticipate that progress would be more rapid if clinical research were accepted as an integral part of the practice of Pediatric oncology so that more oncologists and patients would participate than at present. The technology exists in Pediatric informatics for community oncologists to ally themselves with their alma mater or other academic centers to participate in diagnostic, preventive, and therapeutic research trials using the computer, e-mail, and fax as expedient tools. As a part of the commitment to Pediatric oncology, a Pediatric oncologist should reserve a certain number of hours per week for participation in clinical research. This has the virtue of maintaining greater currency with ongoing investigation. Clinical investigation should serve as the bridge to fundamental science and the excitement in the new molecular biologic understanding of the cancer cell. A set-aside for research, however, constitutes the same imperative commitment as a set-aside for education and updating.

Objectives:

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The Objectives may be considered under the subheadings

I. Knowledge

II. Skills

III. Human values, Ethical practice and Communication abilities

Knowledge

- Describe etiology, patho-physiology, and principles of diagnosis and management of malignancies including emergencies.

- Demonstrate understanding of basic sciences relevant to this specialty
- Identify socio-economic, environmental and emotional determinants in a given case, and take them into account for planning therapeutic measures.
- Describe indications and methods for blood transfusion and pheresis.
- Recognize conditions that may be outside the area of his specialty/competence and to interact with other disciplines.
- Update oneself by self-study and by attending courses, conferences and seminars relevant to the specialty.
- Teach and guide his team, colleagues and other students.
- Undertake audit.
- Use information technology tools and carry out research, both basic and clinical, with the aim of presenting or publishing his/her work in various scientific forum or journals.

Skills

- Take a proper clinical history, examine the patient, perform essential diagnostic procedures and order relevant tests and interpret them to come to a reasonable diagnosis & staging of disease.
- Perform common procedures relevant to the specialty.
- Undertake complete monitoring of the patient.

Attitude and Communication Abilities

- Adopt ethical principles in all aspects of his/her practice. Professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient & breaking of bad news.
- Provide leadership and get the best out of his team in a congenial working atmosphere.
- Apply high moral and ethical standards while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

Course Contents and Details of the core curriculum

I. BIOLOGICAL BASIS OF CHILDHOOD CANCER

Epidemiology of childhood cancer

Childhood Cancer and Heredity

Molecular and Genetic Basis of Childhood Cancer

Biology of Childhood Cancer

Tumor immunology and Pediatric Cancer

II DIAGNOSIS AND EVALUATION OF A CHILD WITH CANCER

Clinical Assessment and Differential Diagnosis of the Child with Suspected Cancer

Pathology and Molecular Diagnosis of Leukemia's and Lymphomas

Diagnostic Pathology of Pediatric Malignancies

III PRINCIPLES OF MULTIMODAL THERAPY

General Principles of Chemotherapy

General Principles of surgery

Principles of Radiation Oncology

Infants and Adolescents with Cancer: Special Considerations

Hematopoietic Stem Cell Transplantation in Pediatric Oncology

Cancer Clinical Trials: Design, Conduct, Analysis, and Reporting

Regulating Patient Safety in Cancer Treatment

Cell and Gene Therapies – Role in pediatric oncology

Evolving Molecularly Targeted Therapies and biotherapeutics

IV MANAGEMENT OF COMMON CANCERS OF CHILDHOOD

Acute lymphoblastic leukemia

Acute Myelogenous leukemia

Chronic Leukemias of childhood

Myeloproliferative and Myelodysplastic Disorders

Hodgkin lymphoma

Malignant Non-Hodgkin Lymphomas in children

Lymphoproliferative Disorders and Malignancies Related to Immunodeficiencies

The Histiocytoses

Tumors of the Central Nervous System

Retinoblastoma

Tumors of the liver

Renal tumors

Neuroblastoma

Rhabdomyosarcoma and the Undifferentiated Sarcomas

Ewing Sarcoma Family of Tumors: Ewing Sarcoma of Bone and Soft Tissue and the Peripheral primitive Neuroectodermal Tumors

Nonrhabdomyosarcomatous Soft tissue sarcomas

Osteosarcoma

Germ cell tumors

Endocrine tumors

Management Of Infrequent Cancers of Childhood

V SUPPORTIVE CARE OF CHILDREN WITH CANCER

Oncologic Emergencies

TumourLysis Syndrome

Hematologic Supportive care for Children with Cancer

Infectious Complications in Pediatric Cancer patients

Nutritional Supportive care

Symptom Management in Supportive care

Nursing Support of the Child with cancer

Rehabilitation of the Child with cancer

Psychiatric and Psychosocial Support for the Child and Family

The other side of the Bed: What Caregivers can Learn from Listening to Patients and their families

Ethical Considerations in Pediatric Oncology

VI. OTHER ISSUES ARISING AT DIAGNOSIS, DURING TREATMENT, AND AFTER CESSATION OF THERAPY

Late effects of Childhood Cancer and Its Treatment

Educational Issues for Children with cancer

Palliative Care for the Child with Advanced Cancer

Financial Issues in Pediatric Cancer

Pediatric Cancer: Advocacy, Insurance, Education and Employment

Complementary and Alternative Medical Therapies in Pediatric Oncology

Pediatric Oncology in Countries with Limited Resources

Preventing Cancer in Adulthood: Advice for the Pediatrician

Resources for Children with Cancer, Their families, and Physicians

Role of Telemedicine in Pediatric Cancer care

CHAPTER IV

ACADEMIC ACTIVITIES IN THE DEPARTMENT

The courses of the study shall be for a period of three years consisting of six terms/semesters

Semesters I and II	-- First Year
Semesters III and IV	-- Second Year
Semesters V and VI	-- Third Year

List of Skills:

Detailed History taking

Clinical Examination

Insertion of peripheral, PICC lines, venous, central line & catheters

Intrathecal administration of medications

Bone Marrow Aspiration/Bone Marrow Biopsy

Parenteral nutrition

Chest tube placement

Preparation of slides, staining techniques

Chemotherapy

Supportive care and growth factors

Infection control & universal precautions

Decision making, clinical diagnosis, planning & interpretation of investigations

Administration of Palliative care.

Blood Banking

Laboratory techniques for diagnosis of various conditions

Special stain, immunophenotype, cytogenetics for bone marrow

FISH

Communication and Counselling

Communication with parents, families, caregivers

Communication with interdepartmental staff

Communication with MSW, Blood Banks, other oncology departments

Counselling to patients, families, caregivers

Compulsory academic activities

- Service rounds: Everyday
- Grand/Teaching rounds: Once/week
- Case presentation: Once/Week
- Seminar: Once/week
- Journal Review Meeting: Once /month
- Death Review Meeting: Once/month
- Clinico Pathological conference: Once/month
- Pediatric tumor board: Once/week
- Radiology discussion: Once/ 2 weeks

In addition the trainee will be allowed to attend national and international conferences of Pediatric Oncology and other relevant specialties

Journal Review Meeting

Journal Review should be held once a week. All students are expected to attend and actively participate in discussion and enter in logbook the relevant details.

All the students are expected to present articles of recent interest & clinical weightage by turn.

A timetable with name of student and moderator should be announced before hand. A record of the presentations made should be entered in logbook.

Seminars

Seminars should be made once a week. All students should by turn present seminars. At other times he is expected to actively attend the seminars. A list of name of student with topic and moderator should be submitted beforehand. Student should enter the presented seminars in logbook.

Clinico Pathological Conference

It is recommended once a month and all students are expected to present cases of interest by turn. Active participation by hematologist and pathologist is recommended. Prior intimation of case by students to faculty members is expected. Such meetings should be entered into logbook.

Interdepartmental Meeting

It is strongly recommended once a week especially with dept. of Radio-diagnosis, dept of Pathology and Dept. of Microbiology. Either case presentations or a topic of common interest can be actively discussed.

CME Programme

A student must be familiar with use of Library, Computer network, Internet, PDQ etc.

A student should be actively involved in teaching nursing students, postgraduate & postgraduates.

DM students are encouraged to learn about clinical research by interacting with clinical investigators if any clinical trial is going on in the institution.

Orientation Programme

National level conference – 1 each year

State level Conference - 1 each year

PROPOSED ROTATIONAL POSTINGS

Department	Duration
Pathology	4 weeks (1 week each in Hematology, Histopathology, Cytology and Cytogenetics)
Microbiology	1 Week
Radiodiagnosis	2 Weeks
Cancer epidemiology and statistics	1 Week
Molecular Lab methods	1 Week
Nuclear Medicine	1 Week
Transfusion Medicine	1 Week
Pain and Palliative Medicine	1 Week
Radiation Oncology	2 Weeks
Surgical Oncology	2 Weeks
Head and Neck Oncology	2 Weeks
Gynaec Oncology	2 Weeks
Bone marrow Transplant	4 Weeks

Log Book

The logbook is a record of the important activities of the candidates during his training; internal assessment should be based on the evaluation of the log book. Collectively, logbooks are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate.

Every student must maintain a record book (diary/log book) and the work carried out by him and the training programme undergone by him during the training, including details of rotation, night calls, procedure and consultations done as D.M candidates. These record books should be checked and assessed by faculty members imparting the training and certified by the head of the department.

Student diary should include following activities.

1. Cases seen on rounds – description of interesting cases and other miscellaneous topics discussed.
2. Out patient cases seen and details of interesting cases with follow up.
3. Procedures done on inpatients and outpatients and consultation done.
4. Postgraduate teaching done during the day with details.
5. Training programmes attended – details of bedside clinics, basic sciences, subject and clinical seminars, Journal clubs, mortality meet and hospital conference.
6. Night duties – details of patients managed and emergencies, consultation, ward calls attended.
7. Details of study with topics covered during off-hours in library / home. Periodicals and Journals reviewed with notes on interesting articles.

Research Training

The candidate is introduced to the field of research in Paediatric oncology both at the clinical and laboratory level. The candidate is required to work one project to be submitted as Thesis. In addition at least two presentations/Publications at state /national / international level conferences / Journals.

CHAPTER V

Scheme of Examination

Written Examination Marks : 400

There shall be four question papers, each of three hours duration. Each paper shall consist of two long essay questions each question carrying 20 marks and 6 short essay questions each carrying 10 marks. Total marks for each paper will be 100. Questions on recent advances may be asked in all papers. Details of distribution of topics for each paper will be as follows.(as per course contents)

Paper I : Basic sciences, includes Cancer Biology, molecular and genetic basis of childhood cancer, Tumor Immunology and cancer etiology

Paper II : Principles of chemotherapy and pharmacology, targeted therapeutics, tumor pathology, radiation biology, cancer surgery

Paper III : Hemato-Oncology , Management of Solid tumors

Paper IV: Cancer epidemiology, Paediatric Palliative Care, Recent Advances, Paediatric Cancer Registry, Transfusion Medicine, Late Effects of Chemotherapy

Clinical Examination Marks : 200

To elicit Competence in clinical skills

One long case, two short cases & ward rounds

Viva voce: Marks : 100

All examiners will conduct viva – voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents, in addition candidates may be also be given case reports, charts, gross specimens, Histo-pathology slides, X-rays, Ultrasound, CT scan images, etc, for interpretation. Questions on use of instruments will be asked. It includes discussion on Research also.

Maximum marks

Theory	Practical	Viva	Grand total
400	200	100	700

CHAPTER VI

Recommended Books & Journals

Books (Latest Edition):

1.Pizzo, Philip A., ed. ; Poplack, David G. ed.Principles and Practice of Pediatric OncologyPhiladelphia : Lippincott Williams & Wilkins.

2.Perry, Michael C. ed. The chemotherapy source book. Philadelphia : Lippincott Williams & Wilkins.

3.Nathan, David G ed.; Orkin,Stuart H ed. Nathan and Oski's hematology of infancy and childhood. Philadelphia : W.B.Saunders,

4.Sutow , Wataru W ; Vietti , Teresa J ; Fernbach , Donald J. Clinical pediatric oncology. St. Louis : C.V. Mosby.

5.Pinkerton, C.R. ed. ; Plowman, P.N. ed. Paediatriconcology:Clinical practice and controversies. London : Chapman & Hall Medical.

6.Halperin, Edward C., ed. Pediatric radiation oncology. New York : Raven Press

7.Molecular Diagnosis of Cancer , COTTER.F.E.

8.Molecular Biology for Oncologists ,YARNOLD..J.R. et al

9.Cancer Chemotherapy Handbook, BAQUIRANJ DELIA~

10The Lymphomas, CANELLOS,G.P.et al

11.Chemotherapy source book, PERRY,M.C,

12.Leukemia, HENDERSON,E.S.et al

13.Cancer Medicine, HOLLAND, J .F. et al.

14.Atlas of clinical Haematology, BEGEMANN

15.Text book of Malignant Haematology, Degos.L et al

16.ClinicalHaematology, ROCHARD Lee. et al

17.Clinical Oncology, ABELOFF et al

18.Important Advances *in* Oncology, .DEVITA, V.T.

19.Cancer Principles and Practice of Oncology, DEVITA , V. T. et al,

20.DecisionMaking *in* Oncology Evidence Based Management, .DJULBEGOVIC. B & SULLIVAN.

21.AJCC Cancer' Staging Manual (American Joint Committee on Cancer

22.Cancer Treatment, HALNAN E .K

23.Cancer Treatment, HASKEL

24.Oncology for Palliative Medicine, HOSKIN PETER & MAKING WENDY)

25.Regional Therapy of Advanced Cancer, RUBIN,J.T

26.MAGRATH, I. The Non-Hodgkin's Lymphoma,

27.Comprehensive Text book of Oncology, Vol 1-2,.MOSSA, A.R

28.Oxford textbook of Oncology PECKHAM, M. et al I

29.A Multi-disciplinary Approach for Physicians and Students, RUBIN Clinical Oncology.

30.Atlas of Diagnostic oncology, SKARIN, A.T

31.BasicScience of Oncology, TANNOCK,E.I

32.Pediatric Oncology ,Philip LANSZOWSKY

33. Pediatric Ethics. Alana R Fleischman.

34. Retinoblastoma. Carlos Rodriguez-Galindo Et al

35. Pediatric Stem Cell Transplantation. P Mehta.

36. Pediatric Hematopoietic Stem Cell Transplantation. Ronald M. Kline

37. Oxford Textbook of Palliative Care For Children. Ann Goldman Et al.

Journals:

1. American Journal of Paediatrics
2. ActaOncologica
3. Haematology/Oncology
4. British Journal of Cancer
5. Cancer
6. CA.A Cancer Journal for Clinicians
7. Cancer Detection & Prevention
8. Cancer Genetics and Cytogenetics
9. Cancer Journal (Scientific American) (NP)
10. Cancer Survey (NP)
11. Cancer Treatment Review
12. Clinical Oncology
13. Current Problem in Cancer
14. Current Opinion in Oncology
15. European Journal of Cancer
16. European Journal of Surgical Oncology
17. Genes, Chromosomes and Cancer
18. Gynecologic Oncology
19. Haematological Oncology
20. Haematology Oncology Clinics of North America
21. Indian Journal of Cancer (Indian)
22. International Journal of Cancer (UICC)
23. International Journal of Gynecological
24. Cancer
25. International Journal of Radiation Oncology
26. Biology/Physics
27. Journal of Cancer Education (NP)
28. Journal of Clinical Oncology
29. Journal of National Cancer Institute (Gift)
30. Journal Of PaediatricHaematology and Oncology
31. Journal of Psycho social Oncology
32. Journal of Surgical Oncology
33. Paediatric&Paediatric Oncology
34. Paediatric Blood and Cancer
35. PaediatricHaematology and Oncology
36. Nutriton and Cancer
37. Oncology (NP)
38. Psycho-Oncology
39. Radiotherapy & Oncology
40. Seminars in Oncology
41. Seminars in Oncology Nursing
42. Seminars in Radiation Oncology
43. Seminars in Surgical Oncology
44. Surgical Oncology Clinics of North America

CHAPTER VII

Monitoring Learning Progress

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in Chapter IV.

The learning out comes to be assessed should included: (i) Personal Attitudes, (ii) Acquisition of Knowledge, (iii) Clinical and operative skills, and (iv) Teaching skills.

i) ***Personal Attitudes.*** The essential items are:

- Caring attitudes
- Initiative
- Organisational ability
- Potential to cope with stressful situations and undertake responsibility
- Trust worthiness and reliability
- To understand and communicate intelligibly with patients and others
- To behave in a manner which establishes professional relationships with patients and colleagues
- Ability to work in team
- A critical enquiring approach to the acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) ***Acquisition of Knowledge***: The methods used comprise of 'Log Book' which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The log book

should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities, if so, desired.

Journal Review Meeting (Journal Club): The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist (see Model Checklist – I)

Seminars / Symposia: The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio- visual aids are to be assessed using a checklist (see Model Checklist-II)

Clinico-pathological conferences: This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a check list similar to that used for seminar.

Paediatric Audit: Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

iii) ***Clinical skills***

Day to Day work: Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills (see Model Checklist III).

Clinical meetings: Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist IV).

Clinical and Procedural skills: The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the log book. (Table No.3)

iv)

Teachingskills: Candidates should be encouraged to teach postgraduate Paediatric students and Para Medical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the postgraduate students (See Model checklist V)

vi) ***Periodic tests:*** The department may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce.

vii) **Work diary / Log Book-** Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

viii) ***Records:*** Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.

Log book

The log book is a record of the important activities of the candidates during his training, Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate.

Format for the logbook for the different activities is given in Tables 1, 2 and 3 . Copies may be made and used by the institutions.

Procedure for defaulters: Every department should have a committee to review such situations. The defaulting candidate is counseled by the guide and head of the department. In extreme cases of default the departmental committee may recommend that defaulting candidate be withheld from appearing the examination, if she/he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

Format of Model Check Lists

Check List -1. MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Student: Name of the Faculty/Observer: Date:

Sl. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Article chosen was					
2.	Extent of understanding of scope & objectives of the paper by the candidate					
3.	Whether cross references have been consulted					
4.	Whether other relevant publications consulted					
5.	Ability to respond to questions on the paper / subject					
6.	Audio-Visual aids used					
7.	Ability to defend the paper					
8.	Clarity of presentation					
9.	Any other observation					
	Total Score					

Check List - 2. MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the Student: Name of the Faculty/Observer: Date:

Sl. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Whether other relevant publications consulted					
2.	Whether cross references have been consulted					
3.	Completeness of Preparation					
4.	Clarity of Presentation					
5.	Understanding of subject					
6.	Ability to answer questions					
7.	Time scheduling					
8.	Appropriate use of Audio-Visual aids					
9.	Overall Performance					
10.	Any other observation					
	Total Score					

Check List - 3

MODEL CHECK LIST FOR EVALUATION OF CLINICAL WORK IN WARD / OPD

(To be completed once a month by respective Unit Heads including posting in other departments)

Name of the Student: Name of the Unit Head: Date:

Sl. No.	Points to be considered:	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations work up					
7.	Beside manners					
8.	Rapport with patients					
9.	Counseling patient's relatives for blood donation or PM					
10.	Over all quality of Ward work					
11.	**Total Score**					

Check List – 4 *EVALUATION FORM FOR CLINICAL PRESENTATION*

Name of the Student: Name of the Faculty:

Date:

Sl. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Above Average 3	Very Good 4
1.	Completeness of history					
2.	Whether all relevant points elicited					
3.	Clarity of Presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of general physical examination					
7.	Whether all physical signs elicited correctly					
8.	Whether any major signs missed or misinterpreted					
9.	Diagnosis: Whether it follows follows logically from history and findings					
10	Investigations required ▪ Complete list					
	▪ Relevant order					
	▪ Interpretation of investigations					
1.	Ability to react to questioning Whether it follows logically from history and findings					
2.	Ability to defend diagnosis					
3.	Ability to justify differential diagnosis					
4.	Others					
	Grand Total					

Check List - V

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Sl. No.		Strong Point	Weak Point
1.	Communication of the purpose of the talk		
2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The sequence of ideas		
5.	The use of practical examples and/or illustrations		
6.	Speaking style (enjoyable, monotonous, etc., specify)		
7.	Attempts audience participation		
8.	Summary of the main points at the end		
9.	Asks questions		
10.	Answers questions asked by the audience		
11.	Rapport of speaker with his audience		
12.	Effectiveness of the talk		
13.	Uses AV aids appropriately		

LOG **BOOK**

Table 1 : Academic activities attended

Name: Admission Year:

College:

Date	**Type of Activity** **Specify Seminar, Journal Club, Presentation, UG teaching**	**Particulars**

LOG **BOOK**

Table 2 : Academic presentations made by the student

Name: Admission Year:

College:

Date	Topic	Type of Presentation Specify Seminar, Journal Club, Presentation, UG teaching etc.

LOG **BOOK**

Table 3 : Diagnostic and Operative procedures performed

Name: Admission Year:

College:

Date	**Name**	**ID No.**	**Procedure**	**Category** **O, A, PA, PI***

* **Key:** O - Washed up and observed

A - Assisted a more senior Surgeon

PA - Performed procedure under the direct supervision of a senior surgeon

PI - Performed Independently

Model Overall Assessment Sheet

Name of the College:
Academic Year:

Check List No	**Particulars**	*Name of Student and Mean Score*				
		A	**B**	**C**		
1	Journal Review Presentations					
II	Seminars					
III	Clinical work in wards					
IV	Clinical presentation					
V	Teaching skill practice					
Total Score						

Note: Use separate sheet for each year.

CHAPTER VIII

Medical Ethics

Sensitisation and Practice

Introduction

There is now a shift from the traditional individual patient, doctor relationship, and medical care. With the advances in science and technology and the needs of patient, their families and the community, there is an increased concern with the health of society. There is a shift to greater accountability to the society. Doctors and health professionals are confronted with many ethical problems. It is, therefore necessary to be prepared to deal with these problems. To accomplish the Goal (i), General Objective (ii) stated in Chapter II (pages 2.1 to 2.3), and develop human values it is urged that ***ethical sensitisation*** be achieved by lectures or discussion on ethical issues, clinical case discussion of cases with an important ethical component and by including ethical aspects in discussion in all case presentation, bedside rounds and academic postgraduate programmes.

Course Contents

1. *Introduction to Medical Ethics*
   - What is Ethics
   - What are values and norms
   - Relationship between being ethical and human fulfillment
   - How to form a value system in one's personal and professional life
   - Heteronomous Ethics and Autonomous Ethics
   - Freedom and personal Responsibility

2. *Definition of Medical Ethics*
   - Difference between medical ethics and bio-ethics
   - Major Principles of Medical Ethics

Beneficence	=	fraternity
Justice	=	equality
Self determination (autonomy)	=	liberty

3. *Perspective of Medical Ethics*
   - The Hippocratic oath
   - The Declaration of Helsinki
   - The WHO Declaration of Geneva
   - International code of Medical Ethics (1993)
   - Medical Council of India Code of Ethics

4. *Ethics of the Individual*
   - The patient as a person
   - The Right to be respected
   - Truth and Confidentiality
   - The autonomy of decision
   - The concept of disease, health and healing
   - The Right to health
   - Ethics of Behaviour modification
   - The Physician – Patient relationship
   - Organ donation

5. *The Ethics of Human life*
   - What is human life
   - Criteria for distinguishing the human and the non-human

Reasons for respecting human life
The beginning of human life
Conception, contraception
Abortion
Prenatal sex-determination
In vitro fertilization (IVF), Artificial Insemination by Husband (AIH)
Artificial Insemination by Donor (AID),
Surrogate motherhood, Semen Intrafallopian Transfer (SIFT),
Gamete Intrafallopian Transfer (GIFT), Zygote Intrafallopian Transfer (ZIFT),
Genetic Engineering

6. *The Family and Society in Medical Ethics*
The Ethics of human sexuality
Family Planning perspectives
Prolongation of life
Advanced life directives – The Living Will
Euthanasia
Cancer and Terminal Care

7. *Profession Ethics*
Code of conduct
Contract and confidentiality
Charging of fees, Fee-splitting
Prescription of drugs
Over-investigating the patient
Low – Cost drugs, vitamins and tonics
Allocation of resources in health cares
Malpractice and Negligence

8. *Research Ethics*
Animal and experimental research / humanness
Human experimentation
Human volunteer research – Informed Consent
Drug trials

9. *Ethical workshop of cases*
Gathering all scientific factors
Gathering all human factors
Gathering all value factors
Identifying areas of value – conflict, Setting of priorities,
Working out criteria towards decisions

Recommended Reading

Francis C.M., **Medical Ethics**, 1 Ed, 1993, Jaypee Brothers, New Delhi.