CURRICULUM / STATUTES
for
Two years MD / Fellowship Program
in
PEDIATRIC NEPHROLOGY
by
University of Child Health Sciences Lahore

University of Child Health Sciences Lahore

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ABOUT THE UNIVERSITY

The University of Child Health Sciences (UCHS) is the first of its kind with the vision of being the world leader in child health. This university was established with the background that Pakistan has one of the highest population growth rates in the world (2%) and children constitute 47.8% of the total population (Census 2017). Pakistan has one of the highest neonatal mortality rates (40/1000 live births), one-third of all children are underweight, 44% are stunted, 15% are wasted & half of them are anemic. There is severe deficiency of trained human resource in the field of child health (pediatricians, pediatric super-specialists, pediatric surgeons, pediatric trained nurses and allied health professionals).

College of Physicians & Surgeons Pakistan (CPSP) is a federal institution and cannot cater forever-increasing pediatric super specialties. Existing six medical universities in Punjab primarily focus on adults and undergraduate education and the number produced per year by CPSP/ universities in the field of child health is small and very inadequate. There is no focused institution at national or provincial level for training of Medical, Nursing & AHP in the field of child health.

Chartered by the Punjab Provincial Assembly in July 2021, the university is already accredited by Higher Education Commission Pakistan. The Children's hospital Lahore, a 1160 bedded one of the largest Children's hospitals on the globe is its constituent hospital while university has 3 colleges and 4 constituent institutes. It shall be a hub for policy making, preventive strategies, teaching and training of human resource in all cadres and all areas of child health care delivery and a hub for research in the field of child health.

The University of Child Health Sciences is going to be a center of excellence for indigenous research, quality education, focused training and producing exemplary leaders in child health. This unique institution has already become a much-needed national beacon of hope for fetal and child health. UCHS will be a hub for research in basic and applied sciences and take lead in comprehensive data based policymaking and preventive strategies in the field of child health. A flagship research-based institute with state-of-the-art facilities and international research-oriented faculty would act as a model for other universities and will have a major impact on child health in Pakistan. It will prevent brain drain by providing a platform for qualified researchers to remain and work in Pakistan.

UCHS will fulfill a major need of National Health Program by providing trained human resource in all cadres and areas of child health care delivery. The University will also be responsible for continuing medical education and continuing professional development, advocacy, public awareness programs and collaboration with national and international organizations, universities and institutions.

The Govt. of the Punjab is building multiple mother and child hospitals in the province of Punjab and has plans for a Children's Hospital at every divisional headquarter (already present in Multan and Faisalabad). By affiliating with these institutions, UCHS will be able to provide direction, guidance and the required human resource to run these projects efficiently. This shall also help in coordination of training, exchange of trainees and trainers and conduct of examinations across the province.

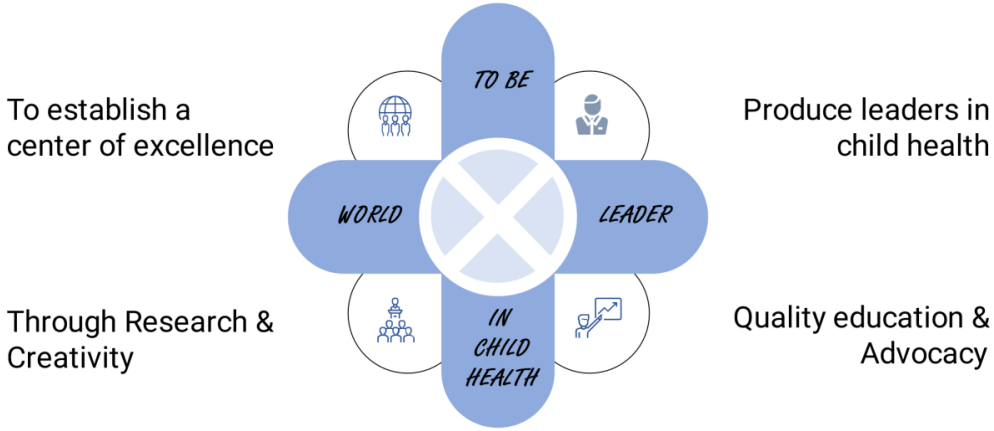
Prof Masood Sadiq
Vice Chancellor
The University of Child Health Sciences, Lahore

VISION, MISSION STATEMENT AND VALUES

There are many lucrative career opportunities in this field due to extreme shortage throughout the globe.

Vision: To be a world leader in child health.

Mission: The mission of Pediatric Nephrology fellowship program is to produce leaders in clinical practice, research, education and advocacy in the field of Pediatric Nephrology.



Values:

1. **Integrity***:* Adherence to the highest ethical standards in personal and professional behavior, and commitment to transparency and accountability in governance.

2. **Compassion***:* Focus on improving work conditions and personal development.

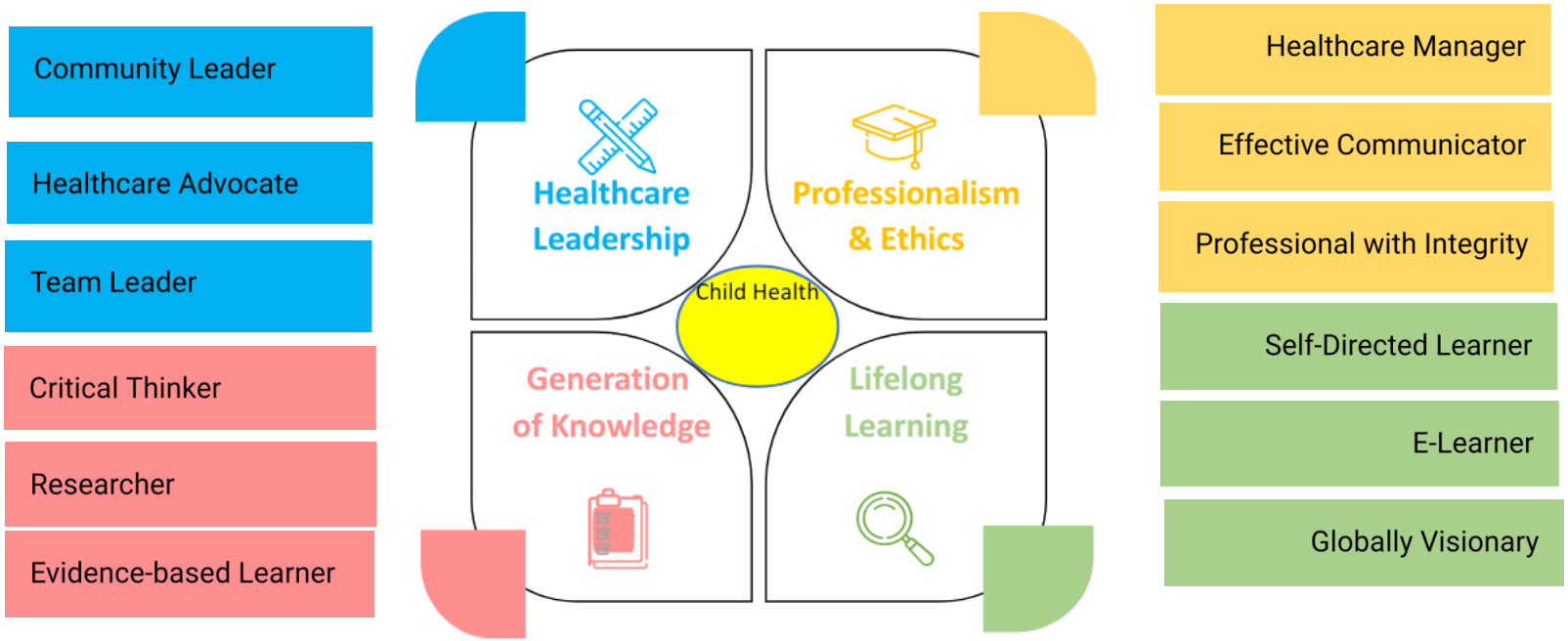
3. **Intellectual Freedom***:* Encouraging creative thinking and innovative solutions.

4. **Inclusion***:* Provide equal opportunities for all, in an environment where everyone feels safe, heard and supported. There would be a culture of welcome diverse backgrounds.

5. **Teamwork***:* Effective communication & collaboration across disciplines and at community level.

COMPETENCY GRID

The competency grid of the university is based on and in-line with the vision and mission of the university of child health sciences and these competencies would be introduced in the student joining the university programs through the university educational environment both on-campus and through community exposure. The university's quality assurance programs in collaboration with the university's quality enhancement cell shall make sure that the mentioned competencies are gradually engraved in the candidate through a dynamic supervised learning experience.



Majority of the teaching programs and their acquired competencies in this university generally revolve around child healthcare. The qualities of its graduate mentioned in the inner grid have a diverse and broad spectrum reflecting the core competencies and personality trait. Similarly, the outer grid is reflecting the subcomponents of the core which further deliberates the learning outcomes of the final product.

1. **Health care leadership**:
    - Leadership is an honor that is attached with responsibilities. Grooming of an elegant young ambitious brain on leadership themes through an empowered, student-centered training environment develops an independently thinking mindset.
    - Healthcare in our country need professional leaders who are capable enough to program and implement the roadmaps of community health, social & preventive strategies, and health economics.
    - The university shall make sure that the trainee or student is given various leadership roles under supervision so that they learn to lead and progress
    - Leader is a team person who is capable of assigning the right task to the right member. Programs come up with multiple opportunities where every student gets a leadership role as a batch leader, project head and gets ample chance to polish her/his leadership skills.
    - Advocacy in pediatric healthcare is the main pillar of preventive and community child health. Arranging awareness seminars, conferences, walks, and academic activities various designated health-related days will make a student understand the significance of advocacy.

2. **Professionalism & Ethics:**
    - Professionalism is the most important affective domain that cultivates behavioral skills including attitude, conduct, being humane and above all a sense of accountability both self and system based.
    - Ethics in healthcare address the issues of patient's privacy, an allied health professional's character reflection while dealing with a patient, handling of conflicts, understanding the morals and applying principles of justice under the prescribed laws during patient care.
    - Effective communication is the key domain of professionalism that is widely practiced in pediatric healthcare. It covers the subject of disease counseling, breaking bad news, teaching skills, public speaking, patient-doctor

negotiations at different levels. Such a skill will be taught through mandatory presentations in mortality meetings, CPCs, journal club presentation, peer-learning and presenting research in conferences.

- These principal domains of learning will be taught through mentorship, role modelling, one-on-one counselling sessions, workshops and 360^0 evaluations.

3. Generation of knowledge:

- Generation of knowledge through critical thinking, power of analysis, research, creativity and evidence is the most basic purpose of any university.
- To develop the thirst that 'somewhere something is waiting to be known' determines the research culture of a university, as universities are rated and ranked by the quality of their research work.
- UCHS with its constituent healthcare facility, the Children's hospital, Lahore is a data mine, where large numbers of diverse pediatric clinical cases are diagnosed, managed and followed. Such a facility is unique worldwide and attracts local and international scholars for quality research.
- The university has clear planning of inducting research modules both in undergraduate and post graduate. Constructing an audit report shall also be mandatory in all post graduate programs.
- Regarding undergraduate programs both in allied health disciplines and nursing completion of research projects shall be one of the mandatory eligibility criteria of exit exam and also part of formative internal assessment.

4. Lifelong Learning:

- 'We can make you learn, how to learn' stands the basic theme of producing a lifelong self-directed learner.
- Medical science has rapidly evolved in the last few decades. Introduction of information-management systems, artificial intelligence, online virtual learning through various learning management systems, robotics in healthcare and ever evolving latest diagnostic modalities, have highlighted the importance of a continuous professional development.
- Leadership academia in UCHS believes that producing a product that is essentially capable of choosing correct learning tools for different learning domains is an integral component of every educational program.

- It shall be made sure that the diversity of instructional strategies used in various training programs cultivates such learning traits that evolve a student into an ever-learning personality who is capable of handling any novel challenge at any stage of professional life.
- Having a global vision is essential for recent knowledge, data updates, disease trends, international healthcare policy twists and coping with worldly standards of health management. UCHS with help of its national and international academic collaborations has an ample capacity to develop and run student and faculty exchange programs.

CURRICULUM DEVELOPMENT PROCESS

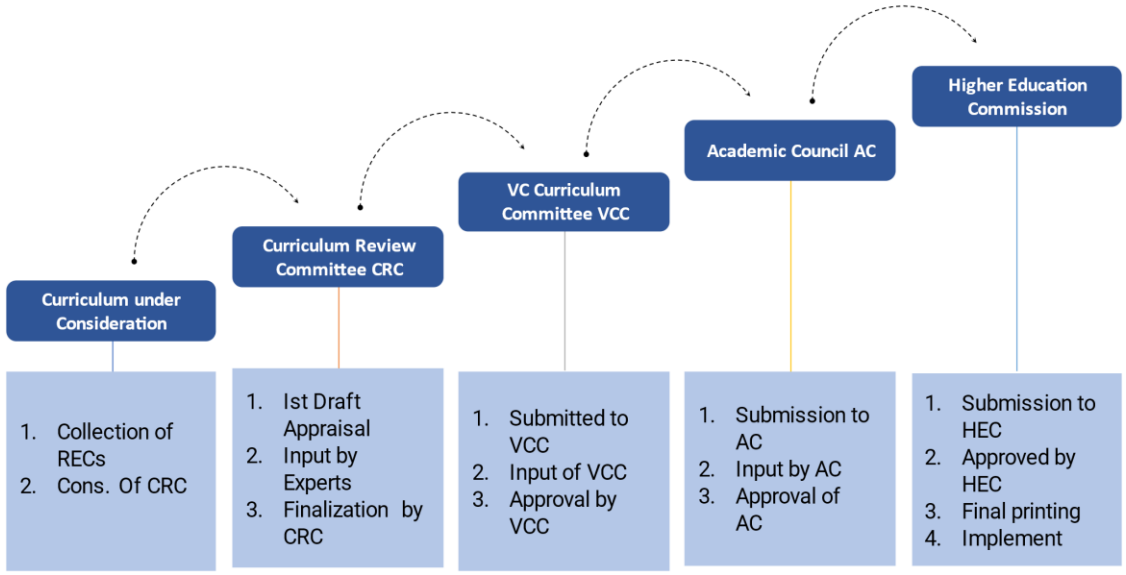
AC: Academic council

CRC: Curriculum review Committee

HEC: Higher Education Commission

RECs: Recommendations

VCC: Vice Chancellor Curriculum Committee



STATUES

VICE CHANCELLOR'S CURRICULUM COMMITTEE

VICE CHANCELLOR	**PROF MASOOD SADIQ**
DEAN **PEDIATRIC SURGERY & ALLIED**	**PROF. NABILA TALLAT**
DEAN **PEDIATRIC MEDICINE& ALLIED**	**PROF. JUNAID RASHID**
DEAN **BASIC SCIENCES & RADIOLOGY**	**PROF. SAMINA ZAMAN**
REGISTRAR	**PROF. NABILA TALAT**
CONTROLLER OF EXAMINATION	**PROF. ABID ALI QURESHI**
DIRECTOR QEC.	**PROF. MUHAMMAD KHALID MASOOD**
PRINCIPAL, **SCHOOL OF ALLIED HEALTH SCIENCES**	**PROF. SAMINA ZAMAN**
VICE PRINCIPAL, **SCHOOL OF ALLIED HEALTH SCIENCES**	**MR. ATTIQUE UR REHMAN**

PRINCIPAL, **COLLEGE OF NURSING**	**MST. AZRA PARVEEN**
EXTERNAL MEMBER (BOARD OF ADVANCE STUDIES & RESEARCH	**DR. AMNA AHMED**
SECRETARY VCC COMMITTEE	**PROF. SAIMA FARHAN**

Nomenclature/Course Title: Fellowship in Pediatric Nephrology

Course Duration: Two years structured program in a recognized nephrology department under the guidance of supervisor.

Training Centers Eligibility: Pediatric Nephrology Department of The Children's Hospital Lahore, accredited by UCHS for this training and all affiliated institutes of the University of Child Health Sciences, Lahore.

ADMISSION CRITERIA

For admission in all programs at UCHS, applications will be invited through advertisement in print and electronic media mentioning closing date of applications. For fellowship in pediatric nephrology, candidates must have FCPS Pediatrics / MD Pediatrics or other equivalent qualification granted by PMDC.

DOCUMENTS REQUIRED FOR ADMISSION

REGISTRATION AND ENROLLMENT

- Once admitted in this educational program, a candidate shall go through the registration process as per prescribed registration regulations by the office of Registrar through its department of medical education.
- Such process shall facilitate the teaching & training timelines of each learner, and their attachment with a supervisor.
- It will also ensure the verification of educational degrees, job experiences, equivalent certificates other identification & registration documents.
- The University will approve Supervisors/Trainers of course after fulfillment of the prescribed criteria.

RECOGNITION / EQUIVALENCE OF THE DEGREE AND THE INSTITUTION

ACCREDITATIONS OF THE TRAINING INSTITUTION

The relevant department of an affiliated institute will get accreditation for training program based on:

- **Faculty:** Properly qualified and trained faculty for education of the program.
- **Facilities of Training Available:** All details of training facilities will be provided by the institute including equipment, space and trained persons.
- **Adequate space:** Class room with the audiovisual aids, Laptop and Wifi available.
- **Library:** Departmental library has latest editions of the recommended books and Pediatric Nephrology journals.

FACULTY / SUPERVISOR ELIGIBILITY CRITERIA

The faculty / supervisor should meet the criteria as per University of Child Health Sciences, Lahore Rules & Regulations.

INTRODUCTION OF PROGRAM

Pediatric Nephrology is the rapidly developing subspecialty in the domain of Pediatric Medicine. It deals with the physiology and pathology of kidneys, ureters, bladder and urethra.

Fellowship in Pediatric nephrology is a 2-years structured super-specialty program after acquiring post-graduation in the field of pediatrics. This program is focused on equipping the students with fundamental knowledge of functions of urinary tract, encompassing the required skills and exposure in order to cater patients with all sorts of renal disorders and perform better in healthcare centers. Fellowship program of pediatric nephrology will help students gain required professional skills, relevant subject specific knowledge, techniques and ethical values to enable them to work closely with patients and apply their acquired expertise at a level between health care professionals and patients for efficient health service delivery.

Renal problems have always been important, but yet to be addressed more vigorously as a public health problem for children in developing countries, especially in Pakistan. Addressing kidney issues has become increasingly important, as various treatable and manageable neurological disorders if left untreated may lead to various disabilities in children and increase the risk of death and intellectual issues in pediatric population.

The academic discipline of Pediatric Nephrology has evolved over the period of time from an observational science to a systematic way of approaching the kidneys and urinary tract and possible interventions to deal with renal disorders. In today's era of medical advancement, pediatric nephrology has emerged as a super specialty of pediatric medicine ranging from acute care of disorders such as acute renal failure to long-term management as in cases of chronic / end-stage renal disease. With the growth of knowledge and development of modern methods for diagnosis and management, Pediatric Nephrology has emerged as a complex clinical specialty.

Nephrologists are essential to deliver comprehensive kidney care, and to offer this care to pediatric population, one has to be a pediatrician first. A pediatric nephrologist is required to have recognized training in child nephrology. It is important to build the capacity of pediatricians who have a special interest in nephrology so that they can manage renal disease more effectively. They are also important for providing training, support and supervision to nurses, other paramedical staff and primary health care providers to the patients under kidney care.

The UCHS is introducing two years second fellowship program in Pediatric Nephrology. The ultimate goal is to produce academically qualified, highly competent pediatric nephrologists with sound knowledge, skills of critical thinking and the ability to practice evidence-based medicine in the field of Pediatric Nephrology.

NEED ASSESSMENT OF COURSE

Considering the burden of the renal disorders in Pakistan with a population of more than 230 million having pediatric population of almost 48.7%, there is extreme shortage of kidney health services. Apart from the adequate number of adult nephrologists to cater this huge burden, pediatric nephrologists are far less in number and very limited skilled pediatric nephrologists available in the country. Child nephrology faces present and predicted workforce shortage as demand for services increases. This deficiency is particularly evident in Pakistan. Many of the tertiary care pediatric hospitals in Pakistan are having lot of patients with renal disorders while the training for pediatric nephrologists is not being pursued at many centers. In Pakistan, only dozens of pediatric nephrologists are present which are extremely inadequate compared with the burden of kidney disorders. These disorders include largest burden of glomerulopathies, acute and chronic kidney disease, urinary tract infection, stone disease, hypertension and so on. Currently few educational institutes are providing these fellowship programs nationally which are still not meeting the demands. With the introduction of fellowship program by University of Child Health Sciences, the demand of child nephrologists will be fulfilled across the country for better health care delivery.

SCOPE OF PROGRAM

Pakistan is the country which has a large pediatric population in the world with 48.7% of its population being under 18 years of age. Due to consanguinity and inter relation marriages, the incidence of inherited kidney disorders is being increased day by day and it is being augmented by prematurity and antenatal birth events. These childhood renal disorders have huge burden in the society in terms of standard care, provision of health facilities, and human resource. Currently available facilities are focused in the big cities where limited number of specialists are working catering huge population. In order to meet the demands and provide better health care, Pediatric Nephrology fellowship program will help provide high level of skilled services in all aspects of health care facilities. Introduction of this program will increase the human resource not only in the field of pediatric nephrology but also in nephrology as a whole. Given their shortage, child nephrologists will have exciting opportunities to serve in different segments of the society including:

- Public sector hospitals
- Private sector hospitals
- Academics institutions
- Private medical colleges
- Rehabilitation centers nationally as well as globally.

There are many lucrative carrier opportunities in this field due to extreme shortage throughout the globe.

VISION

To be a world leader in child health

MISSION

The mission of Pediatric Nephrology fellowship program is to produce leaders in clinical practice, research, education, and advocacy in the field of Pediatric Neurology.

AIMS AND OBJECTIVES OF THE COURSE

The objective of pediatric nephrology fellowship program is to establish clearly defined standards of knowledge and skills to effectively practice Pediatric Nephrology at secondary or tertiary care level in Pakistan.
The clinical program is structured for fellows to acquire a broad knowledge base in renal physiology and pathophysiology and to gather first-hand experience and progressive responsibility in evaluation and management of kidney-related disorders. This document outlines a competency-based approach to goals and objectives as they relate to the Pediatric Nephrology core curriculum.

EXIT LEARNING OUTCOMES

Following learning outcomes would be expected from the candidates:-

- To know pathophysiology of common disorders affecting kidneys in children
- To be able to understand renal diseases that rarely but importantly present in childhood
- To formulate and lead an appropriate investigation plan for a range of kidney conditions based on clinical localization of pathology derived from detailed history and focused examination
- To know how to make differential diagnosis of acute and chronic, progressive and non-progressive diseases
- To be able to comprehend life-long implications of chronic renal conditions presenting in childhood
- To understand the principles, basics and interpretation of diagnostic radiological imaging and nuclear investigations
- To identify indications, contraindications and limitations of diagnostic radiological and nuclear imaging modalities
- To perform and interpret renal biopsy including recognition of common glomerular conditions

- To be able to understand the techniques of kidney transplantation and common pediatric urology problems

- To develop expertise in practical procedures specifically related to the clinical care of infants, children, and adolescents.
- To work effectively in multi-disciplinary teams and with colleagues from a wide range of professional groups
- To interact effectively with professionals in other disciplines, voluntary sector and recognize their role and their impact in the team
- To develop a wide range of effective age-appropriate communication skills specific to their work with babies, children, young people and their families
- To understand how to use guidelines, its limitations and appropriateness to work outside the guidelines as per resource availability and situation.

SCHEME OF STUDIES

INSTRUCTIONAL STRATEGIES: SPICE MODEL

UCHS will use the SPICE model which offers a useful tool for planning a new Curriculum or evaluating an existing one.

S	Student-centred	⟷	Teacher-centred
P	Problem-based	⟷	Information gathering
I	Integrated	⟷	Discipline-based
C	Community-based	⟷	Hospital-based
E	Electives	⟷	Standard programme
S	Systematic	⟷	Apprenticeship-based/ Opportunistic

Students will be involved in the process of curriculum development and given responsibility of learning and asked to set their own learning objectives depending on their needs. This method of teaching results in more active and deep learning. Rather than giving them information and knowledge they should be given the actual patients problem as a trigger which they will discuss with each other and will also search literature and will construct their own knowledge. They will be taught in an integrated manner in spite of subject wise.

TEACHING METHODOLOGIES

Following Teaching Methodologies will be used:

Large group discussions, small group discussions, bedside teaching, problem-based learning, case-based learning, hands-on trainings, mortality audits, clinic-pathological conferences, seminars, invited talks, community visits, outpatient clinics, specialty clinics, formative assessments, videos, peer-learning, mentorship, SOPS, protocols, feedback. In addition, case-based learning, hands-on trainings, mortality audits, invited talks, community visits, outpatient clinics, specialty clinics, formative assessments, videos, peer-learning, feedback; all methodologies will be used to promote learning.

LEARNING OUTCOMES	CONTENT/ Theme	TEACHING METHODS	ASSESS MENT	LEARNING RESOURCES
Fellows should be able to:- • Enlist etiologies of various types of nephrotic syndrome and other glomerular disorders with Interpretation • Describe classification of nephrotic syndrome according to age and presentation • Explain appropriate investigations and treatment plan according to the classification of glomerular disorders • Outline the indications, basics of pathologic interpretation and the ability to perform percutaneous kidney biopsy • Learn the analysis, interpretation and limitations of the urinary sediment, and its correlation with pathological entities • Explain the concept of disorders to child and family in a beneficial and therapeutic manner	**Nephrotic syndrome / Glomerular disorders:**	Lectures Small & Large Group Discussions Case-based Discussions Ward Rounds Bedside teaching & training Journal Clubs CPCs Videos OPDs / Special Clinics Morbidity & Mortality Audits	Problem based learning / Problem Solving Formative assessment by MCQs / TOACS Short / Long Cases Work place based assessment Mini-CEX E-logbook / E-Portfolio	**BOOKS** Pediatric Nephrology Textbook (8th edition) Comprehensive Pediatric Nephrology Textbook (2nd edition) Handbook of Dialysis by Daugridas (6th edition) Handbook of Kidney Transplantation by Danovitch (6th edition) **JOURNALS** Pediatric Nephrology International Urology & Nephrology Journal European Journal of Pediatrics
• Determine etiologies of various types of Nephrology Emergencies with Interpretation • Enlist appropriate investigations and treatment plan • Describe the indications, basics and the ability to perform acute peritoneal dialysis	**Nephrology Emergencies:** Acute kidney injury, Hyperkalemia, Hypernatremia, Hypocalcemia, Hypertensive crisis			
• Determine etiologies of urinary tract infections • Describe appropriate investigations and treatment plan • Discuss the interpretation, correlation and limitations of imaging tests used in the diagnosis and treatment of UTIs	**Urinary tract infections / Vesico-ureteric Reflux**			

• Explain the grading, mechanism, risk factors and complications of renal scarring				
• Determine etiologies of chronic kidney disease • Enlist risk factors for progression to chronic kidney disease and nephro-protective treatment strategies • Describe appropriate investigations and treatment plan • Explain management of complications of chronic kidney disease • Discuss the indications, principles and complications and develop the ability to perform and supervise acute and chronic peritoneal dialysis, acute and chronic hemodialysis	**Chronic kidney disease**			
• Determine etiologies of various types of renal tubular disorders with Interpretation • Describe appropriate investigations and treatment plan accordingly • Explain the interpretation and correlation of blood gases and other formulas	**Renal tubular disorders**			
• Determine etiologies and clinical presentation of various types of obstructive uropathies • Describe comprehensive diagnostic work up and treatment plan • Explain the interpretation, correlation and limitations of imaging tests used in the diagnosis and treatment	**Obstructive uropathy**			
• Explain clinical features of various cystic kidney diseases • Enlist diagnostic criteria to diagnose accurately the various disorders	**Cystic kidney diseases**			

• Determine genetic basis and inherited patterns • Describe comprehensive treatment plan for long-term management				
• Demonstrate a systematic and logical approach to the investigations of systemic and metabolic renal conditions • Enlist various clinical presentations of systemic and metabolic disorders with renal involvement • Demonstrate comprehensive diagnostic work up for systemic and metabolic disorders in children • Explain emergency management of metabolic crisis	**Systemic / Metabolic conditions with renal involvement – SLE, HUS**			
• Perform comprehensive evaluation of patients with kidney stone disease • Enlist investigations of specific types of kidney stones	**Urolithiasis**			
• Determine etiologies of various types of bladder disorders • Enlist appropriate investigations and treatment plan accordingly • Describe the interpretation and correlation of urodynamics	**Bladder Disorders**			
• Determine various etiologies of hypertension • Describe pathophysiology of hypertension • Explain appropriate investigations and treatment plan accordingly • Discuss the interpretation and correlation of nuclear imaging modalities	**Hypertension**			
• Evaluate native kidneys and urinary tract before transplantation • Determine compatibility of recipient and donor by performing relevant investigations • Enlist the indications, work-up, risks,	**Pediatric Renal Transplantation**			

management strategies, and knowledge about various immunosuppressive agents and protocols. • Formulate a complete list of post-transplant complications and select the plan of investigations and treatment.				

CLINICAL ROTATIONS

YEAR – 1
Summary of Rotations

Sr. No.	Specialties	Year 1 (Months)
1.	Child Nephrology Inpatients and Clinics	06
2.	Hemodialysis center	03
3.	Pediatric Urology Inpatient & Clinics	02
4.	Radiology / Nuclear Imaging	01
	Total	**12**

YEAR – 2
Summary of Rotations

Sr. No.	Specialties	Year 2 (Months)
1.	Child Nephrology Inpatients and Clinics	06
2.	Hemodialysis center	03
3.	Renal Transplantation	02
4.	Pathology / Immunology	01
	Total	**12**

MANDATORY TRAINING WORKSHOPS

A) **For Supervisors/Faculty**: The supervisors of various teaching and training programs run by the university also need to undergo various generic and specific trainings as a part of requirement for supervisors and also for continuous medical education and faculty development. The supervisors will undergo the following mandatory workshops as an eligibility criterion:

1. Research methodology and biostatistics
2. Communication skills
3. Assessment of competence
4. Education planning and evaluation
5. Professionalism, Ethics & Leadership

B) **For Learners**: Workshops are meant to give hands-on training on mandatory competencies required during the educational program. The university has the following mandatory workshops for all Learners. Every fellow will have following 4 workshops before / during the training period.

1. Research methodology and biostatistics
2. Communication skills
3. BLS (Basic Life Support)
4. Professionalism, Ethics & Leadership

ASSESSMENT

YEAR WISE COMPETENCY TABLE

The clinical program is structured for fellows to acquire a broad knowledge base in nephrology physiology and pathophysiology and to gather first-hand experience and progressive responsibility in evaluation and management of kidney-related disorders. This document outlines a competency-based approach to goals and objectives as they relate to the nephrology core curriculum. The level of competence to be achieved each year is specified according to the key as follows:

1.Observer status 2. Assistant status 3. Perform under supervision 4. Perform under indirect supervision 5.Perform independently

COMPETENCIES	1st YEAR	2nd YEAR
	Competency level	Competency level
Patient care		
History taking & Physical examination	3	5
Formulate a diagnostic and therapeutic plan	2	4
Make and discuss differential diagnosis	2	4
Medical knowledge		
Demonstrate knowledge of commonly encountered nephrology problems	2/3	4
Develop skills for effective case presentation and discussion of optimizing medical care.	2/3	4
Solidify knowledge base by educating others (Medical students, residents, co-fellows, and faculty).	2/3	4
Interpersonal & Communication Skills		
Communicate effectively with patients and their families.	2/3	4
Professionalism		
Demonstrate accountability by being punctual, completing patient care tasks, attending conferences, completing administrative tasks.	4	4
Conduct clinical nephrology research with honesty, integrity and protection of patients' rights.	4	4
Medical management of surgical and non-surgical complications of Urology / Renal transplantation	1/2	3/4
Procedures		
Perform procedures – Peritoneal dialysis	3/4	5
Hemodialysis vascular access	2/3	5
Renal biopsy	3/4	5

It will consist of action and the professional growth oriented student-centered integrated assessment, with additional components of the internal assessment, formative assessment and summative assessment.

STUDENT-CENTERED INTEGRATED ASSESSMENT

It views students as decision makers in need of information about their own performance. Integrated assessment is meant to student's responsibility to decide what to evaluate as well as how to evaluate, it encourages students to "own" the evaluation and to use it as a basis for self-improvement. Therefore, it tends to be growth oriented, student controlled, collaborative, dynamic, contextualized, and flexible and action oriented. It will be based on:

- Self-assessment by the students
- Peer assessment
- Internal assessment by the faculty.

Self-Assessment by the Students

Each student will be provided with a predesigned self-assessment form to evaluate his/her level of comfort and competency in dealing with different types of education related situations. It will be the responsibility of the student to correctly identify his/her areas of weakness and to take appropriate measures to address to these weaknesses.

Peer Assessment

The students will be expected to evaluate their peers after the monthly small group meetings. These should be followed by constructive feedback accordingly and should be non-judgmental in nature. This will enable students to become good mentors in the future.

Internal Assessment by the Faculty

The students are encouraged to confront their weaknesses and to remove them rather to hide them from their teachers. It will be based on:

- Discipline and Punctuality
- Behavior and Practical work
- Professionalism and Participation in interactive sessions
- Six-monthly assessment

FORMATIVE ASSESSMENT

This will be helpful to improve the existing instructional methods and course contents in use. There will be ongoing assessment of the students during their training period by means of MCQs, SEQs, picture quizzes, assignments, and small group discussions.

Formative assessment will include:

- History taking
- Examination
- Mini-CEX
- Directly Observed Procedural Skills
- Work-Place Based Assessment
- E-Log Book

Feedback will be given to the students to improve their short comings and deficiencies.

SUMMATIVE ASSESSMENT

It will be carried out at the end of fellowship program to empirically evaluate the cognitive, psychomotor and the affective domains after successful completion of the course. Summative assessment will be conducted at the end of each year which will include MCQ's, SEQ's, TOACS, and OSCE as defined in the table of specifications.

Eligibility Requirements for Second Fellowship Pediatric Nephrology Examination

- To have passed FCPS/MD Pediatrics, or been granted exemption by the UCHS.

- To have undertaken two years of the specified training in Pediatric Nephrology, under a supervisor and in an institution approved by the UCHS.
- To submit a complete E logbook.
- To provide a certificate of approval or acceptance of one research paper along with two case reports or two original papers in a Y or higher category journal as a mandatory requirement.
- Passed yearly internal examination.

Examination Schedule

- **Pediatric Nephrology** theory examination will be held twice a year
- Theory examinations will be held in Lahore.
- English shall be the medium of examination for the theory, practical, clinical and viva examinations.
- The UCHS will notify of any change in the centers, the dates and format of the examination
- A competent authority appointed by the UCHS has the power to debar any candidate from any examination if it is satisfied that such a candidate is not a fit person to take the UCHS examination because of using unfair means in the examination, misconduct or other disciplinary reasons
- Each successful candidate in the Fellowship examination shall be entitled to the award of UCHS fellowship after being elected by the UCHS council and on payment of registration fees and other dues.

EXAMINATION FEE

- Applications along with the prescribed examination fees and required documents must be submitted by the last date notified for this purpose before each examination
- The details of examination fee and fees for change of centre, etc. shall be notified before each examination
- Fee deposited for a particular examination shall not be carried over to the next examination in case of withdrawal/ absence/exclusion.

REFUND OF FEES

1. If, after submitting an application for examination, a candidate decides not to appear, a written request for a refund must be submitted before the last date for withdrawl with the receipt of applications. In such cases, a refund is admissible to the extent of 75% of the fee only. No request for refund will be accepted after the closing date for

receipt of applications.

2. Fee deposited for a particular examination shall not be carried over to the next examination in case of withdrawal / absence/exclusion.
3. If an application is rejected by the UCHS, 75% of the examination fee will berefunded, the remaining 25% being retained as a processing charge. No refundwill be made for fee paid for any other reason, e.g. late fee, change of centre/ subject fee, etc.

FORMAT OF EXAMINATIONS

Every candidate appearing in the Fellowship exit emaniantion of the UCHS must pass both parts of the Fellowship examination unless exemption is approved.

Fellowship Program in Pediatric Super-Specialties

Year-I	Internal Assessment at the end of first year		
	Written examination SEQs	10	(Marks : 100)
	Clinical examination (2 short cases)		(Marks : 50)
			(Total Marks : 150)
Year-II	**Theory:**		
	Written examination SEQs	10	(Marks : 100)
	MCQs	100 (one best type)	(Marks : 100)
	Each paper of 3 hours duration		
	Clinical:		
	Short Cases (4)	10 minutes each	(Marks : 100)
	Long Cases (1)	70 minutes each	(Marks : 100)
	TOACS: **(**10 STATIONS)	7 minutes each	(Marks : 100)
			(Total Marks : 500)

Internal assessment shall be given a weightage of 10% and it will be held within the department by supervisor.

Research: 2 original research papers published in a PMDC approved journals

OR

1 original article and 2 case reports published in a PMDC approved journals

FORMAT OF TOACS

Tasks-Oriented Assessment of Clinical Skills (TOACS) comprise of 10 stations of 7 minutes each with a change time of one minute for the candidate to move from one station to the other. The stations may have an examiner, a patient or both. Structured clinical tasks will be set at each station. The examiners using a global rating scale will assess the performance of each candidate. In the interactive stations the candidate will have to perform a procedure, for example, taking history, performing clinical examination, counseling, assembling an instrument etc. One examiner will be present at each interactive station and will either rate the performance of the candidate or ask questions testing reasoning and problem-solving skills.

FORMAT OF LONG CASE

Each candidate will be allotted one long case and allowed 30 minutes for history taking and clinical examination. Candidates should take a careful history from the patient (or relative) and after a thorough physical examination identify the problems which the patient presents with. During this period a pair of examiners will observe the candidate. In this section the candidates will be assessed on the following areas:

Interviewing Skills

- Introduces self. Listens patiently and is polite to the patient.
- Is able to extract relevant information.

Clinical examination skills

- Takes informed consent
- Uses correct clinical methods systematically (including appropriate exposure and re-draping).

Case presentation discussion

- Presents case skillfully.
- Gives correct findings.

- Gives logical interpretations of findings and discusses differential diagnosis.
- Enumerates and justifies relevant investigations.
- Outlines and justifies treatment plan (including rehabilitation).
- Discusses prevention and prognosis.
- Has knowledge of recent advances relevant to the case.
- During case discussion the candidate may ask the examiners for laboratory investigations which shall be provided, if available. Even if they are not available and are relevant, candidates will receive credit for the suggestion.

FORMAT OF SHORT CASES

Candidates will be examined in at least four short cases for a total of 40 minutes jointly by a pair of examiners. Candidates will be given a specific task to perform on patients, one case at a time. During this part of the examination, the candidate will be assessed in:

Clinical examination skills

• Takes informed consent.
• Uses correct clinical methods including appropriate exposure and re-draping.
• Examines systematically.

Discussion

• Gives correct findings
• Gives logical interpretation of findings
• Justifies diagnosis

As the time for this section is short, the answers given by the candidates should be precise and relevant to the patient under discussion.

THE UCHS RESERVES THE RIGHT TO ALTER/AMEND ANY RULES/REGULATIONS.

Any decision taken by the UCHS on the interpretation of these Regulations will be binding on the applicant**s.**

TABLE OF SPECIFICATIONS									
Subject Area	**Diagnosis**	**Management**	**Etiology**	**Investigation**	**Complication**	**Prognosis**	**Prevention**	**Pathophysiology**	**SAQs**
Nephrotic syndrome / Glomerulopathies Weightage : 10% MCQs : 10; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**		**1**			**1**
Renal emergencies - Hyperkalemia, Hypernatremia, Hyponatremia, Hypocalcemia, Hypertensive crisis Weightage : 10% MCQs : 7; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**	**1**		**1**		**1**
Urinary tract infection / Vesicoureteric reflux Weightage : 3% MCQs : 4; SAQs : 1; TOACS : 1	**1**	**1**		**1**	**1**	**1**	**1**	**1**	**1**
Acute kidney injury Weightage : 4% MCQs :7; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**		**1**	**1**	**1**	**1**
Chronic kidney disease Weightage : 6% MCQs : 10; SAQs : 1; TOACS : 2	**1**	**1**	**1**	**1**	**1**	**1**	**1**		**1**

Kidney stone disease Weightage : 3% MCQs : 5; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**	**1**	**1**	**1**		**1**
Congenital anomalies of kidney and urinary tract Weightage :10% MCQs : 10; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**	**1**	**1**			**1**
Systemic / Metabolic renal disorders Weightage :10% MCQs : 10; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**	**1**	**1**		**1**	**1**
Cystic renal diseases Weightage : 6% MCQs : 3; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**	**1**	**1**		**1**	**1**
Renal tubular disorders Weightage : 4% MCQs : 3; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**	**1**	**1**		**1**	**1**
Hypertension Weightage : 4% MCQs : 3; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**	**1**	**1**	**1**		**1**

Bladder disorders Weightage : 4% MCQs : 3; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**	**1**	**1**		**1**	**1**
Renal transplantation Weightage : 6% MCQs : 5; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**	**1**	**1**		**1**	**1**
ABGs / Renal ultrasound / MCUG / Renal scans / ECG / Renal histopathology interpretation Weightage :10% MCQs : 10; SAQs : 1; TOACS : 1	**1**	**1**			**1**				**1**
Procedures - Renal biopsy / Acute peritoneal dialysis catheterization / Hemodialysis catheterization Weightage :10% MCQs : 10; SAQs : 1; TOACS : 1	**1**	**1**	**1**	**1**	**1**				**1**

RESEARCH PUBLICATIONS

- UCHS promotes research activities and encourage faculty and students to involve in research activities.
- Trainees of super specialty will have to publish two original articles in Y or higher category journal as mandatory requirement. Or one original research paper and two case reports in Y or higher category journal as mandatory requirement.
- The research study for this article must be undertaken during registered training period and must be on a topic related to pediatric nephrology.

E-LOG & E-PORTFOLIO

- An E-portfolio is a collection of work (evidence) in an electronic format that showcases learning over time.
- This E-Portfolio will be comprised of collection created by a student of their course-related work, like essays, posters, photographs and videos. Academic E-portfolios can also capture other aspects of a student's life, such as volunteer experiences (community work/field work), extracurricular activities, teachers' feedback, 360^{o} evaluation and more.
- This e-Portfolio will let students organize, document, and display their most significant learning experiences in one digital space. The reflective learning process of creating and building a portfolio over time deepens their learning and yields a dynamic product that makes learning visible to any audience.
- LMS (learning management system) will be created by IT Department of UCHS and every supervisor and trainee will be given a password.
- Supervisors will give regular feedback and that will be documented in e-log book.

COMMUNICATION OF CURRICULUM

Communication of a given curriculum is an important component of any teaching or training program, both under graduate and post graduate. This task shall be accomplished the following modalities:

- Availability of a Pdf copy (free download version) of the curriculum on University website.
- Mandatory orientation sessions on curricular dynamics of every program
- Mentioning and highlighting the learning outcomes of all teaching activities time-to-time
- Making sure that the academic timelines mentioned in the curriculum are followed in letter and spirit. (Surveillance by QEC)
- The supervisors/teachers will communicate different segments of the curriculum for the scheduled learning and its assessment.
- Teaching rosters & timetables

MANAGEMENT OF CURRICULUM

The management of the curriculum will be carried out in three steps:

a. **Planning and development of curriculum**: At UCHS, we believe that the teachers and the learners go together in transforming the learning environment by active participation and decision making. In order to plan and develop the curriculum the individual program curriculum committee (CRC) will be responsible having representation/feedback from both faculty and students.
b. **Implementation of the process**: The curriculum development and implementation will be ensured by the Heads of departments, teaching Dean of the university or program director. They will make sure that the process goes on smoothly and all the issues will be sorted out that are faced by the program curriculum committee.
c. **Monitoring of the process**: The whole process of curriculum development, planning and implementation will be looked after by the Vice Chancellor Curriculum Committee at the UCHS.

EDUCATIONAL ENVIRONMENT

Educational environment of medical university is highly specialized and demanding and a supportive learning environment promotes active and deep learning. Educational Environment may have profound effects on the students' behavior and performance and on the outcome of the curriculum. UCHS aims to provide its students an excellent learning environment.

Classroom learning usually takes the form of lectures, seminars, and small group discussions, where students learn about the latest developments in their field of study, including new technologies, treatment methods, and research findings. Professors and guest speakers often provide students with valuable insights and perspectives that can help them to better understand complex medical concepts. UCHS is equipped with:

- Centrally air-conditioned building
- 2 large Auditoriums
- Multiple conference and workshop rooms
- Well-furnished classrooms for all programs to accommodate a good number of students

Practical experience. Students typically work in clinical settings, such as hospitals, clinics, Skill and research labs, where they gain hands-on experience working with patients, conducting experiments, and collecting data. This practical experience is essential for developing the skills and knowledge necessary to succeed in the medical field. Following facilities are offered to students to fulfill the need

- Busy Inpatient, Outpatient and emergency Departments according to needs of each specialty
- Skill labs, state of the art Radiology and pathology department

Research opportunities are also available to students allowing them to engage in original research projects and contribute to the ongoing development of their field. This research experience can be helpful for students who are interested in pursuing academic or research careers, as it provides them with the opportunity to work closely with experienced researchers and contribute to important scientific discoveries.

- **E-Library** facility is provided to students with a 24-hour free internet and easy access to international journals.

- **Statistical department** is present to help students manage their statistical research data

Collaboration among students is encouraged through group projects, case studies, and team-based learning activities. This approach helps students to develop strong interactive skills, such as effective communication, leadership, and teamwork, which are crucial for success in the medical field.

Collaboration between students and faculty is an essential part of the educational environment. Professors and mentors often work closely with students, providing guidance and feedback on their work, and helping them to develop the skills and knowledge necessary for success in their chosen fields.

Well-equipped IT department is established to fulfill the needs of students for a better Use of technology to support teaching and learning.

Cafeteria facility is also provided to students and faculty. It is located inside hospital building with a large sitting area and it is serving quality hygienic food.

Sports club facility is provided as an opportunity for students to participate in extracurricular activities.

Clinical symposia and Conferences are arranged on regular basis to encourage Co-curricular activities and to provide a healthy competitive environment.

STUDENT SUPPORT PROGRAM

Medical universities recognize that their students face unique challenges and stressors while pursuing a medical degree. Students are expected to manage academic workload, maintain a high level of professionalism, and develop the necessary skills to succeed as medical professionals.

Student support program of UCHS aims to address these challenges and provide resources and support for students to help them succeed academically, personally, and professionally.

Mental health support: Students are at an increased risk of developing mental health problems, such as anxiety and depression due to the high-stress nature of their field of study. Mental health support program OF UCHS will offer confidential counseling services, mental health workshops to manage their stress level and support groups to help students cope with these challenges.

Academic support and mentorship: Trainees may struggle with the academic workload or with specific subjects. Academic tutoring, study skills workshops and mentorship programs will help students achieve their academic goals. 5-6 students will be attached with one mentor.

Career development. Students may benefit from guidance on career options and interview skills. Career support program will offer career counseling, networking opportunities, or mentorship programs to help students develop the skills and knowledge they need to succeed in their chosen career.

Peer support groups and **mentorship programs** will help students connect with and learn from each other. Students may benefit from connecting with peers who are going through similar experiences.

Fitness classes, nutrition counselling, or stress-reduction workshops will help trainees to prioritize their health and wellness as they usually neglect their physical and mental health due to the demands of their studies and increased workload.

International exchange programs, study abroad opportunities, or global health initiatives will help lrarners gain a broader perspective on healthcare. Exposure to different healthcare systems and cultures will benefit students to broaden their vision.

Alumni programs or networking events will help learners connect with alumni who can provide valuable insights or career guidance.

Engaging in research projects and gaining experience in scientific inquiry. A support program will offer opportunities for students to participate in research projects, attend research conferences, or receive mentorship from faculty members who are conducting research.

Harassment committee. Students may face discrimination based on their race, gender, sexual orientation, or other characteristics. A support program will offer workshops, training and orientation sessions to create a safe and supportive environment for all students.

FACULTY DEVELOPMENT

The process of educating and helping medical faculty improve their teaching performance, research and leadership skills, and opportunities for career development.

A better approach to faculty development is a centralized faculty development effort in which department of medical education will be responsible for overseeing and carrying out faculty development activities so that faculty skills and performance can be centralized and standardized across an entire university. In this regard, financial and collaborative resources are better utilized across the entire university setting.

DME after need assessment will design Faculty development courses

A mini- FDP must be mandatory for all Faculty members to attend including following modules

1) Teaching and Learning
    - Teaching small groups
    - Teaching large groups
    - Teaching in clinical environment
    - Collaborative learning
    - Feedback in Medical education
    - Teaching and Learning in Community

2) Curriculum development and evaluation
    - Curriculum designing
    - Curriculum evaluation
3) Assessment in Medical education
    - Written Assessment
    - Skill-Based Assessment
    - Work-Based Assessment
4) Learning and Teaching Professionalism

Other FDP can be specific and according to need Assessment of various level of faculty especially related to Leadership and Research.

PROGRAM EVALUATION

Evaluation is an essential part of developing any educational experience and can enable educators to find out if the learning events they provide are effective and if not, how they can be improved. The focus of evaluation is on quality improvement and it is necessary to ensure ongoing relevance, coherence, balance and progression within a curriculum. The program evaluation will be done by QEC through a decided modus operandi as per HEC guidelines.

JOB DESCRIPTION

Fellows working in pediatric sub-specialties are amongst the key members involved in the patients care and management. Job descriptions of these fellows have been devised to ensure their proper training, development of effective clinical skills and produce high level skilled fellows in the respective sub specialty.
Job descriptions have been developed in 4 domains during their training program.

1. Clinical Management
2. Educational Responsibilities
3. Administrative Responsibilities
4. Research work

1. Clinical Responsibilities

1.1 Emergency:

- He/ she shall perform and cover emergency for 24 hours as per duty roster to look after patients with multidisciplinary approach.
- Patients having disorder related to sub-specialty admitted in emergency should be first evaluated by the registrar of emergency department followed by senior registrar emergency followed by specialty Fellow/Senior Registrar if required.
- He/she shall ensure each patient should be seen/ discussed within the same shift or within 6 hours stay in emergency followed by specialty Fellow/Senior Registrar if required.
- He/she shall discuss difficult cases with on-call consultant in case of any problem.
- Critically sick patients (hemodynamically unstable) should be shifted to MICU within 24 hours. If space is not available in MICU then they can be shifted to ICU of ward after initial stabilization accompanied by the doctor with resuscitative measures.

1.2. Indoor Work:

- He/she is responsible, according to roster for patient management in ward.
- He/she shall see the newly admitted patients in ward within 12 hours.
- Fellow of Pediatric Neurology who will also verify the dosages of the drugs during the evening/night ward rounds.
- He / she is responsible for ward round before consultant's round.
- He / she shall personally review and examine patients with reference to history, examination, diagnostic tests and treatment chart of the patient and make sure these are complete in every respect in discussion with the consultants.
- He / she is responsible to explain/discuss patient condition/future plan/prognosis with attendants of the patient after obtaining advice of consultant and shall note it on the chart.
- He / she shall be responsible to sign every discharge slip and ensure that complete record is properly arranged and stitched after patient is discharged. He/she shall write a summary of every discharged patient himself / herself and get it verified by the consultant & forward it to the Statistical Officer within three days of the discharge of the patient.

- He / she shall be responsible to send the calls to different departments and also responsible to receive call from other departments as per duty roster. He/she shall also be responsible to discuss each case with the consultant/Head of Department.
- He/she shall conduct a daily evening/night round and shall ensure that all patients have been attended and shall personally examine all newly admitted patients.
- He/she shall maintain admission and discharge register and ensure that all columns are properly and completely filled in and a daily report in this regard will be sent to the Medical Superintendent.
- He/she is responsible for clinical audit of the units with consultation of Head of Department.
- Do the compulsory rotations both internal & external as per their curriculum.
- He/she develop excellent communication skills to effectively communicate with patients, families and other medical staff.
- **Counseling** of critically sick patients should be done by fellows in accordance with the treating consultants.
- Mishaps are to be informed by fellow to consultant on-call and DMS of the hospital, latter being responsible to involve the higher authority.
- He/she shall be responsible for record keeping.
- Mortality and morbidity meeting will be prepared by the fellow in accordance with consultants.
- He/she shall develop ability to work well in a team environment with other medical professionals.

1.3. Out-Patient Department Work:

- He/she shall start outdoor clinics at 8:00 am and shall continue as per hospital timings.
- He/she shall discuss all new patients and difficult cases with consultants
- He/she shall maintain follow-up cards & make entries.
- Attitude towards patients should be respectable and empathetic.
-

1.4. Community Work:

Fellow of pediatric sub- specialty will actively participate in community outreach programs under the guidance and supervision of consultants. He/she will seek to educate the diverse communities regarding important health related issues

of respective specialty and screen the population for immediate medical care to be sought. By this program, our institute will help to increase public awareness in the nearby surroundings and also in the far-off areas. With the help of these outreach programs, we will be able to develop relations and engagements with the communities we serve. This will strengthen private public relations between individuals, diverse communities, industries and government's institutions for future developments in health sector.

2. Administrative Responsibilities

- He/she shall learn administrative skills by active participation in ward management.
- He/she shall supervise the arrangements of medicines/surgical items etc. for the patients admitted in the ward.
- He/she shall look after the maintenance of emergency trolley, sterilization and medicines availability and check on daily basis.
- Ward maintenance and cleanliness is the responsibility of the sister in charge and checked and ensured by fellows.
- He/she shall make sure that all the patients admitted in the ward are being properly looked after by the medical staff.

3. Educational Responsibilities

- He/she shall have case presentations in ward and clinic-pathological conferences and at other academic forums.
- He/ she should stay current on advancements in the field of sub-specialty.
- He/she shall teach and train the junior staff under guidance of consultants including staff nurses & students of Allied Health Professionals.
- He/she shall actively participate in annual meetings/seminars/conferences and present research work.

4. Research Work

Research work is the key component of fellows and other faculty members working in tertiary care institutes. During their training, fellows are supposed to conduct high quality research which will include 2 original articles to be published or receive acceptance letter in journal not less than Y category approved by PMDC and HEC. Or to publish one original article and 2 two case reports in a Y category journal.