



جمهورية مصر العربية

وزارة التعليم العالي
الوزير

قرار وزاري
رقم (٦٧٤) بتاريخ ٨ / ١١ / ٢٠٢١
بشأن تعديل اللائحة الداخلية لكلية الطب جامعة المنصورة
(مرحلة الدراسات العليا) بنظام الساعات المعتمدة

وزير التعليم العالي والبحث العلمي ورئيس المجلس الأعلى للجامعات

- ** بعد الاطلاع على القانون رقم ٤٩ لسنة ١٩٧٢ في شأن تنظيم الجامعات والقوانين المعدلة له.
- ** وعلى قرار رئيس الجمهورية رقم ٨٠٩ لسنة ١٩٧٥ بإصدار اللائحة التنفيذية لقانون تنظيم الجامعات والقرارات المعدلة له.
- ** وعلى القرار الوزاري (٦٩٤) بتاريخ ٣/٤/٢٠١١ بشأن إصدار اللائحة الداخلية لكلية الطب جامعة المنصورة (مرحلة الدراسات العليا) بنظام الساعات المعتمدة ، والقرارات المعدلة له.
- ** وعلى موافقة مجلس جامعة المنصورة بجلسته بتاريخ ٢٢/٢/٢٠٢٠
- ** وعلى موافقة لجنة قطاع الدراسات الطبية بجلستها بتاريخ ١٤/٩/٢٠٢١ بالتقويض
- ** وعلى موافقة المجلس الأعلى للجامعات بجلسته بتاريخ ٢٥/٩/٢٠٢١

قرر
(المادة الأولى)

يضاف بند جديد تحت رقم (٣) إلى المادة (٣ مكرر) باللائحة الداخلية لكلية الطب جامعة المنصورة (مرحلة الدراسات العليا) بنظام الساعات المعتمدة الصادرة بالقرار الوزاري رقم (٦٩٤) بتاريخ ٣/٤/٢٠١١ على النحو التالي:

مادة (٣ مكرر) الدبلومات المهنية

تمنح جامعة المنصورة بناء على طلب كلية الطب البشري الدبلومات المهنية الآتية:-

١-
٢- الدبلومة المهنية التخصصية لأمراض الكلى في الأطفال

(المادة الثانية)

يلحق باللائحة الداخلية المشار إليها بعالية الخطة الدراسية والإمتحانية المرفقة والخاصة بالدبلومة المهنية التخصصية لأمراض الكلى في الأطفال بنظام الساعات المعتمدة بقسم طب الأطفال.

(المادة الثالثة)

على جميع الجهات المختصة تنفيذ هذا القرار.

وزير التعليم العالي والبحث العلمي
ورئيس المجلس الأعلى للجامعات

فأب
(أ.د. / خالد عبد الغفار)



م.د. / محمد عبد الغفار
٢٠٢١ / ١١ / ٢٥



DIPLOMA CURRICULUM

1. CURRICULUM CONTENT

اسم المقرر: الدبلومه المهنية في تخصص أمراض الكلى للأطفال

Pediatric Nephrology Professional diploma

التخصص: PEDIATRICS

الرمز الكودي: (PNEPH 400)

2. Entry requirements

Entry to pediatric nephrology training requires the following qualifications: Post-graduate at least master degree in Pediatrics or an Egyptian Fellowship of Pediatrics or Egyptian Board of Pediatrics or what's equal.

3. PROGRAM SPECIFICATION:

Administrative information

1. Program offering the course: Pediatric nephrology Fellowship
2. Department offering the program: Pediatrics
3. Department responsible for teaching the Program: Pediatric nephrology Unit
4. Date of approval by the Department's council: 9/9/2020
5. Date of last approval of program specification by Faculty council: 17/11/2020
6. Program title: Applied anatomy and embryology of kidney and urinary tract
7. Program code: PNEPH 400
8. Total teaching hours: 40 hours
9. Program coordinator: **Prof. Ayman Mohammed Hammad**



أحمد عبد الله

4. PROGRAM AIMS

- 4.1 To provide competencies, knowledge and skills needed to understand the anatomy and the embryology of the kidney and urinary tract.
- 4.2 To provide competencies, knowledge and skills needed to understand the pathology of the kidney and urinary tract.
- 4.3 To provide competencies, knowledge and skills needed to understand the physiology of the kidney and urinary tract.
- 4.4 To provide competencies, knowledge and skills needed to understand the different tools used in the diagnosis and management of the kidney and urinary tract diseases.
- 4.5 To provide competencies, knowledge and skills needed to practice Pediatric nephrology Fellowship of high quality in the community.
- 4.6 To demonstrate the ability for self-learning and evaluate the clinical practice and educational needs

5. Intended Learning Outcomes (ILOs) for program

A. Knowledge ILOS

A1. Recognize the basic science of the kidney and urinary tract.

A2. Identify common renal and urinary tract medical diseases among pediatrics

A3. Define basics of renal replacement therapy among pediatrics

B. Intellectual ILOS

B1. Design management of different renal diseases

B2. Interpret different laboratory and radiological methods for assessment of renal diseases in children.

B3. Construct renal replacement therapy plan for children with ESRD.

C. Practical ILOS

C1. Prescribe medications safely and efficiently for patients with renal diseases.

C2. Perform renal ultrasound and US guided renal biopsy

C3. Manage patients on renal replacement therapy and perform any minor intervention needed.



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6-Academic standards

Academic Reference Standards for Pediatric Nephrology specialized diploma degree of Mansoura Faculty of Medicine were compiled according to National Academic Reference Standards

Courses contributing to the program

2. Intended Learning Outcomes (ILOs)

Semester 1:

A. Knowledge

- A1. Identify the development of the kidney, the urinary tract and the genitalia.
- A2. Know the anatomy of the kidney, the urinary tract and the genitalia.
- A3. Understand the physiology of normal micturition and acquisition of bladder control
- A4. Discuss the mechanisms of prevention of renal stone formation.
- A5. Recognize the clinical importance of fluid, electrolytes and acid base abnormalities
- A6. Understand the physiology of water, electrolyte and acid base metabolism
- A7. Describe normal glomerular circulation.
- A8. Identify the histology of the kidney and the urinary tract.
- A9. Describe the histopathologic features of pediatric glomerular diseases.
- A10. Define the histopathologic features of pediatric tubule-interstitial diseases.
- A11. Explain the pathology of different causes of graft dysfunction.
- A12. Discuss the Pharmacotherapy of renal diseases:
 - A12.1 Principles of drug pharmacokinetics
 - A12.2 Renal handling of drugs and chemicals
 - A12.3 Mechanisms of drug metabolism
 - A12.4 Drug prescribing in disease states and during dialysis
 - A12.5 Relevant drug-drug interactions
 - A12.6 Mechanisms of drug nephrotoxicity
 - A12.7 Therapeutic drug monitoring
 - A12.8 Renal transplant immunosuppression

B- Intellectual skills

- B1. Judge the importance of genital abnormalities, ambiguous genitalia, inter sex and their association with renal and other disease
- B2. Interpret normal urine analysis.
- B3. Interpret normal glomerular function.
- B4. Interpret normal tubular function tests.
- B5. Analyse the results renal biopsy.
- B.6 Pharmacotherapy of renal diseases:
 - Understand indications of therapeutic drug monitoring
 - Access drug and poison information
 - Familiar with common overdoses and the need for extracorporeal therapy



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C- Practical skills

- C.1 Prescribe and manage immunosuppression for renal transplantation
- C.2 Prescribe and adjust drug dosage in patients with renal dysfunction
- C.3 Perform accurate correlation between clinical presentations and histo pathological findings in renal biopsy
- C.4 Recognize how to use different laboratory tests to assess renal functions.
- C.5 Perform renal ultrasound

Semester II:

A. Knowledge

- A13. Identify principals of infection control in renal units
- A14. Define the Principles of renal biopsy:
 - A14.1 the indications for renal biopsy
 - A14.2 the contra-indications to performing a renal biopsy
 - A14.3 the potential complications of renal biopsy and their relative frequency
- A15. Identify the Principles of renal imaging:
 - A15.1 Urography
 - A15.2 Ultrasonography
 - A15.3 Radionuclide scans
 - A15.4 Computed tomography
 - A15.5 Magnetic resonance imaging
 - A15.6 Renal circulation imaging (angiography)
- A16. Give an idea about the Renal Function Testing:

Trainees are encouraged to develop knowledge and expertise in the following areas, including indications, contraindications, complications, interpretation of results, cost effectiveness, and application to patient care of:

 - A16.1 Urinalysis, including dipstick and sediment
 - A16.2 Measurement of renal plasma flow and GFR, including interpretation of serum creatinine concentration and calculation of its clearance rate
 - A16.3 Measurement of renal concentrating and diluting capacity
 - A16.4 Measurement of microalbuminuria
 - A16.5 Measurement of proteinuria using semiquantitative and quantitative methods
 - A16.6 Assessment of urinary acidification
 - A16.7 Assessment of renal sodium and potassium handling
- A17. Identify the Principles of screening for renal diseases
- A18. Explain Immunogenetics of glomerular and tubular renal disease
- A19. Define the causes of disturbed micturition
- A20. Demonstrate the pathophysiology of the neuropathic bladder
- A21. Identify the role of urodynamics in the investigation of disturbed micturition
- A22. Discuss the epidemiology and microbiology of UTI and role of host defense mechanism
- A23. Recognize the clinical signs and symptoms of UTI in different ages of children
- A24. Identify evidence base linking UTI, vesico-ureteric reflux, reflux nephropathy and progression to chronic kidney disease



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- A25. Describe the acute presentation of urinary tract obstruction and understand the long term consequences of urinary tract obstruction
- A26. Know the types of reconstructive procedures undertaken in children and the relevance to future management including transplantation
- A27. Identify the clinical presentation of renal stone disease and its effect on renal function
- A28. Understand how to investigate a patient with renal stones using biochemical and imaging techniques
- A29. Give an idea about treatment options available including dietary and lifestyle measures to reduce renal stone risk
- A30. Classify the pathophysiology of micro and macroscopic hematuria
- A31. Know the causes of hematuria and define the relationship to systemic diseases
- A32. Discuss the pathophysiology of proteinuria and nephrotic syndrome
- A33. Define the physiological and pathological causes of proteinuria
- A34. Demonstrate the causes of proteinuria and relationship to systemic diseases
- A35. Define the risk of extrarenal complications of nephrotic syndrome
- A36. Know the treatment options available, and the potential adverse effects, for the management of proteinuria and associated extrarenal complications
- A37. Identify the etiology, pathology and genetics of glomerular disease
- A38. Describe the pathophysiology of systemic disease causing glomerulonephritis especially vasculitis, SLE, viral infections including HIV and thrombotic microangiopathies
- A39. Recognize the natural history and prognosis for the different glomerulonephritis's
- A40. List the investigations required in a patient with glomerulonephritis both at time of presentation and during long term follow up (including role of renal biopsy)
- A41. Give an idea about the available management strategies (both specific and non-specific) including immunosuppression, cytotoxic drugs and plasmapheresis
- A42. Explain the pathophysiology of interstitial nephritis and tubulo-interstitial disease, their causes and links with systemic diseases
- A43. List the investigations needed in patients with interstitial nephritis
- A44. Define the natural history and prognosis of interstitial nephritis
- A45. Describe the management strategies for treatment and the place for steroids or other immunosuppression

B- Intellectual skills

B.7 Identify the Principles of renal biopsy:

- B.7.1 Able to organize the necessary investigations to minimize risk of renal biopsy
- B.7.2 Able to take informed consent from child/parent/guardian for native and transplant renal biopsies
- B.7.3 Able to appropriately manage any complications that occur post biopsy
- B.7.4 Able to interpret renal biopsy findings with the assistance of a Renal Histopathologist and draw conclusions re treatment options and prognosis
- B.7.5 Able to discuss biopsy findings, treatment options and prognosis with parent/guardian and child (where appropriate)

B.8 interpret different renal imaging

B.9 Know about Renal Function Testing:

- B.9.1 Interpretation of urinalysis



- B.9.2 Interpretation of fractional excretion of electrolytes
- B.10 Identify Immunogenetics of renal diseases:
- B.10.1 Select appropriate investigations needed for diagnosis and follow up of patients with renal disorders.
- B.10.2 Interpret appropriate investigations needed for diagnosis and follow up of renal patients.
- B11. Interpret urodynamic studies and instigate appropriate management
- B12. Coordinate follow up radiological investigations of UTI
- B13. Select appropriate antimicrobials to treat UTI and adjust according to antibiotic sensitivities
- B14. Recognize when appropriate to involve radiologists and urologists
- B15. Assess the patient with renal stones and appropriately investigates patients with recurrent renal stones
- B16. Recognizes the limitation of medical treatment and appropriately refers patients for surgical assessment
- B17. Recognize the need to appropriately involve other clinicians including dieticians, urologists and radiologists
- B18. Interpret the results of appropriate biochemical investigations
- B19. Formulate a differential diagnosis, appropriate plan of investigation and management for a child with hematuria
- B20. Recognize the indication for renal biopsy in the investigation of hematuria and discuss the associated risks, likely prognosis and requirement for long-term review.
- B21. Formulate a differential diagnosis, appropriate plan of investigation and management for a patient with asymptomatic proteinuria, symptomatic proteinuria or nephrotic syndrome
- B22. Assess the severity of proteinuria and risk of extra renal complications
- B23. Recognize the indications for renal biopsy in the investigation of proteinuria and discuss the associated risks, likely prognosis and requirement for long-term review.
- B24. Investigate patients with suspected glomerulonephritis appropriately including laboratory tests, imaging, renal biopsy and tissue diagnosis from other organs including skin.
- B25. Interpret the results of laboratory investigations and renal biopsy findings
- B26. Make appropriate decisions about urgency of treatment
- B27. Determine the role of immunosuppression - balancing risks and benefits and monitoring long term use
- B28. Investigate patients appropriately including the use of laboratory tests, imaging and renal biopsy
- B29. Interpret the results of appropriate laboratory investigations and renal biopsy findings
- B30. Organize the screening and investigations required to detect associated disorders in primary tubulopathies
- B31. Initiate investigations including laboratory tests, imaging and renal biopsy when appropriate.
- B32. Determine when screening is required and to interpret the results of screening tests.
- B33. Act to minimize the risks of acute kidney injury after angiographic procedures
- B35. Monitor and review the effectiveness of blood pressure control over time with child/parent/career and designated general pediatrician
- B34. Assess a child with hypertension (including use of home and ambulatory blood pressure monitoring) and appropriately investigate to exclude underlying secondary causes



C- Practical skills

- C6. Able to recognize appropriate use of specific therapies in the management of HUS
- C7. Assess patients who may have renovascular disease and determine if further investigation and intervention are required
- C8. Provide long term care of blood pressure and cardiovascular risk for the patient with renovascular disease
- C9. Identify the child with secondary hypertension who is suitable for definitive treatment; recognize and be able to counsel child/parent/carer about the limitations of such intervention
- C10. Recognize, investigate and manage diarrhea + (D+) and diarrhea - (D-) HUS
- C11. Assess patients before and after renal biopsy by ultrasound
- C12. Institute management of associated AKI
- C13. Clinically assess patients with glomerulonephritis with or without systemic involvement
- C14. Identify and manage cardiovascular risk factors including hyperlipidemia and hypertension
- C15. Manage children with different glomerular disorders

Semester III:

A. Knowledge

- A46. List the different causes and clinical presentations of primary and secondary tubular disorders
- A47. Identify the expanding knowledge regarding the genetic basis of primary tubulopathies
- A48. Give an idea about the pathophysiology and genetics of rarer metabolic disorders leading to renal disease - cystinosis, oxalosis, methylmalonic acidemia.
- A49. Know the investigations required for rarer inherited and metabolic disorders.
- A50. Identify the natural history, treatment and prognosis of these rarer metabolic disorders.
- A51. Understand the causes, clinical manifestations and outcomes of renal cystic disease
- A52. Describe the modes of inheritance and methods of screening
- A53. List the potential extra renal associations, eg hepatic fibrosis
- A54. Discuss the causes and pathophysiology of renovascular disease
- A55. List the methods used to investigate renovascular disease
- A56. Schedule the risks and complications of investigations such as angiography
- A57. Identify the natural history of the disease and the long term outcomes of intervention and medical management
- A58. Understand the pathophysiology of primary (essential) hypertension
- A59. List the causes of secondary hypertension and how to investigate and treat
- A60. Define hypertension according to normal BP data in children
- A61. Use instruments to identify the techniques of BP measurement, their advantages and limitations
- A62. Give an idea about the importance of non pharmacological measures in achieving blood pressure targets in children
- A63. Organize the mechanisms of action and potential side effects of anti hypertensive drugs and the tolerability and convenience of prescribed regimens
- A64. Understand the disorders that comprise the hemolytic uremic syndrome, their etiology, multi-system clinical manifestation, pathogenesis and outcome
- A65. Know the epidemiology and public health aspects of verocytotoxin-producing Escherichia coli infection



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- A66. List the causes of AKI in infants, children and including neonatal period
- A67. Recognize the pathophysiology of AKI in different clinical scenarios eg multi-organ failure, glomerulonephritis/systemic disease and neonatal period
- A68. Know the methods available to define AKI including neonatal period
- A69. Demonstrate the treatment options relevant to manage AKI (including potential side effects. (Understand the principles and indications for renal replacement therapy (including CVVHD, CVVHDF) in AKI in infants, children and neonates.

B- Intellectual skills

- B36. Identify patients at risk of AKI and take appropriate preventative steps where possible
- B37. Select and prescribe the appropriate dialysis modality

C- Practical skills

- C16 Investigate and manage the underlying cause of AKI
- C17. Prescribe medication safely to patients with acute kidney injury
- C18. Manage the patient with acute renal failure requiring both plasmapheresis and acute renal replacement therapy
- C19. Assess patients with interstitial nephritis and take a full drug and environmental history
- C20. Makes decisions about urgency of treatment and the place of steroids or other immune suppression
- C21. Put a plan of management of tubular disorders with particular emphasis on correction of acid base and electrolyte disturbance
- C22. Manage Patients with disorders of fluid, electrolyte and acid base homeostasis and administer appropriate management
- C23. Perform a thorough and accurate clinical examination which includes the assessment of the volume state
- C24. Manage patients with fluid, electrolyte and acid base disorder
- C25. Interpret urodynamic studies and instigate appropriate management
- C26. Manage disorders of micturition and bladder dysfunction
- C27. Understand the clinical signs and symptoms of UTI in different ages of children
- C28. Manage patients with urinary tract obstruction appropriately (including management of fluid and electrolyte disturbances occurring after the relief of obstruction)
- C29. Investigate and manage cystic kidney disease including liaising with hepatologists and geneticists
- C30. Assess patients with inherited diseases and be aware of the systemic features found in these diseases.

Semester IV:

A. Knowledge

- A70. Know the causes of chronic kidney disease (CKD)
- A71. Interpret the presentation and clinical course and prognosis of different causes of CKD throughout childhood and adolescence
- A72. Define the classification of CKD
- A.73. Identify the basis and use of estimated glomerular filtration rate (eGFR)



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- A74. Discuss the pathophysiology of systemic complications of CKD, including bone disease and anemia
- A75. List the indications for renal replacement therapy (RRT) including transplantation
- A76. Understand the pathophysiology of renal anemia and the haematological and biochemical methods to diagnose, assess and monitor treatment in renal anemia
- A77. Compare anemia secondary to chronic kidney disease and other causes
- A78. List the indications for and the use of erythropoietic stimulating agents (ESA's) and their complications
- A79. Recognize the indications for the use of oral and parenteral iron therapy and its complications
- A80. Use diagrams to explain the physiology of calcium, phosphate, bone and mineral metabolism and the pathophysiology of renal bone disease.
- A81. Know the importance of the use of biochemical tests and imaging techniques in the diagnosis and management of renal bone disease
- A82. List the indications for and the clinical use of dietary modification, phosphate binders, vitamin D preparations, calcimimetic drugs and parathyroidectomy.
- A83. Give an idea about monitoring patients to assess response to treatment for renal bone disease
- A84. Identify the principles of hemodialysis and efficiency in comparison to other dialysis modalities
- A85. List the choices of vascular access and their relative merits and potential complications
- A86. Interpret the methods available for assessment of hemodialysis adequacy in children and adolescents
- A87. Recognize the relative contraindications to peritoneal dialysis
- A88. Identify the therapeutic and life style advantages of different modes of peritoneal dialysis
- A89. List the methods available for assessment of adequacy in peritoneal dialysis
- A90. Discuss the surgical procedure for insertion of peritoneal dialysis catheters and the complications of peritoneal dialysis access and of the dialysis itself
- A91. Memorize the indications for acute dialysis and plasma exchange
- A92. Identify the principles of hemodialysis, hemofiltration and hemodiafiltration and indications for their use
- A93. Understand the principles of plasma exchange and potential complications of treatment
- A94. Interpret the methods of creating vascular access for acute renal replacement therapy
- A95. Know the importance of the role of renal transplantation in the management of children with end stage renal disease
- A96. Discuss the principles of renal transplantation, and the medical, surgical, ethical and social contraindications
- A97. Compare the benefits and risks of transplantation in comparison with other treatment modalities for end stage renal disease
- A98. Understand the risks and benefits associated with different organ types, eg living donor and deceased donor transplantation
- A99. Identify the principles of blood group typing, HLA matching and donor-recipient cross matching
- A100. Know the ethical and legal framework (especially the Human Tissue Act) governing renal transplantation



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- A101. Recognize the issues that can influence patient and renal transplant survival in the first 3 months following renal transplantation
- A102. List the medical and surgical problems which occur in the first 3 months following renal transplant
- A102. Recognize the indications for radiological investigation (ultrasound scan, radio isotope scanning etc) and renal transplant biopsy in the acute stage following renal transplant
- A103. Weigh the role of renal transplant biopsy in the diagnosis of acute rejection
- A104. Understand the mode of action and adverse effects of immunosuppressive agents
- A105. Identify the potential for interaction of immunosuppressive agents with other drugs
- A106. List the available management strategies for acute transplant rejection
- A107. Identify the factors in the early post-transplant stage that influence long term graft function
- A108. Identify the factors that can influence long term patient and renal transplant survival
- A109. List the medical and surgical problems which can occur after the first 3 months following renal transplant
- A110. Know the causes of renal dysfunction more than 3 months after renal transplantation
- A111. Describe the potential long term adverse effects of immunosuppressive agents
- A112. Mention the strategies that maximize long term graft function and survival
- A113. Give an idea about the increased risk of cardiovascular and malignant disease in long term transplant patients and the treatment and preventative strategies available
- A114. Memorize the main causes of CKD in young people which may be associated with long term survival and require transfer to adult services
- A115. Check the issues of compliance, consent and confidentiality in adolescents and young people with CKD.
- A116. Interpret Immunogenetics of transplantation:
- Recognize how to identify the different methods of histocompatibility testing
 - Discuss how to match the recipient with different donors
 - Describe the different methods of immune response
 - Discuss the pathophysiology of rejection
 - Explain the different types of rejection

B- Intellectual skills

- B38. Audit the use of ESA's and iron therapy in individual patients and patient populations
- B39. Interpret the results of biochemical and radiological investigations in patients with disorders of bone and mineral metabolism
- B40. Plan and prescribe/adjust hemodialysis and monitor its effects and adequacy
- B41. Assess suitability of child/ adolescent and their family for peritoneal dialysis
- B42. Plan and prescribe long-term peritoneal dialysis and monitor its effects and adequacy
- B43. Assess the suitability of a patient for hemodialysis or hemofiltration
monitor response to treatment
- B44. Assess the suitability of a patient for plasmapheresis
- B45. Assess the suitability of children with end stage renal disease for renal transplantation
- B46. Develop and follow protocols for pre transplant assessment of recipients.
- B47. Optimize graft and patient outcome in the first 3 months after renal transplantation
- B48. Assess the significance of changes in renal transplant function
- B49. Investigate renal transplant patients with acute transplant dysfunction and interpret the results of investigations
- B50. Plan and modify immunosuppressive therapy regimens



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- B51. Identify declining transplant function, assess the significance of changes, investigate appropriately, and make appropriate changes to management
- B52. Utilize strategies that optimize long term graft and patient outcomes
- B53. Modify long term immunosuppressive therapy regimens and tailor to an individual patient considering other co-morbid conditions and changing circumstances
- B53. Manage the change of environment within which the patient will be managed
- B54. Manage the change in personnel and referral systems applicable to CKD patients, dialysis patients and transplant patients at the pediatric/adult interface.
- B55. Recognize when the timing of referral from pediatric/young persons service to adult dialysis services appropriate

C- Practical skills

- C31. Identify, investigate and manage more complex renal cases including renal transplant patients.
- C32. Prevent, diagnose and manage renal bone disease in children with chronic kidney disease before the initiation of renal replacement therapy
- C33. Manage renal bone disease in patients on peritoneal dialysis, hemodialysis and with a renal transplant
- C34. Manage different forms of vascular access, and their complications, working with dialysis nurses, vascular surgeons and interventional radiologists
- C35. Diagnose and manage the complications of hemodialysis
- C36. Instigate appropriate treatment to prevent and treat renal bone disease
- C37. Assess and manage growth and nutrition, including the use of enteral feeding and growth hormone
- C38. Diagnose renal anemia, monitor the effects of treatment and manage failure of treatment
- C39. Manage renal anemia in chronic kidney disease patient not yet on renal replacement therapy
- C40. Manage renal anemia in chronic kidney disease patient on renal replacement therapy
- C41. Prescribe and monitor replacement therapy including plasma infusions, plasma exchange
- C42. Assess and manage fluid, electrolyte, acid-base disturbances, hypertension and nutrition in CKD
- C43. Investigate and manage chronic renal failure
- C44. Identify and treat potential reversible causes
- C45. Assess the degree of renal failure, monitor its progression and instigate appropriate renal replacement therapy
- C46. Manage fluid balance, electrolyte and acid base disturbance in CKD
- C47. Manage child/adolescent following insertion of peritoneal dialysis catheter including prescription of acute dialysis if required
- C48. Diagnose and manage the complications of peritoneal dialysis, and of peritoneal dialysis access, working with dialysis nurses, and surgeons
- C49. Prescribe hemodialysis and hemofiltration safely, adjust prescriptions appropriately and monitor response to treatment
- C50. Identify complications in renal transplant recipients
- C51. Able to minimize and manage the medical complications of a failing renal transplant



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Behavior and Attitude

1. Demonstrate respect to all patients irrespective of their socio-cultural or religious status.
2. Respect for the dignity, privacy and rights of patients (aware of medical ethics and informed consent).
3. Conduct patient interview with patience, attentive listening and respect.
4. Awareness of the need to communicate with patients and their families, and to involve them fully in planning management
5. Adequately and clearly explaining to the patient and/or his/her relatives the nature of the illness, diagnostic and therapeutic plans, possible complications and outcomes.
6. Efficiently and clearly document patient records.
7. Appropriate handling during difficult situations such as conveying bad news or dealing with patients' anger.
8. Discuss the progression of the patient's condition, therapeutic outcomes and professional mistakes if any openly in a way that promotes patient trust and confidence.
9. Able to achieve optimal patient care and the same time appreciating the cost effectiveness to allow maximum benefit from available resources.
10. Show appropriate professional attitudes with the patient including empathy, trust worthiness.
11. Understand and utilize appropriate health care quality concepts

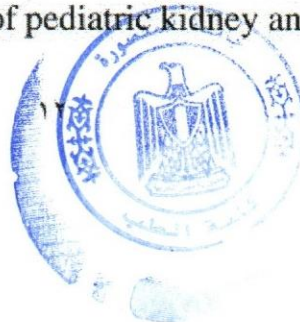
7. Program Structure:

The pediatric Nephrology diploma requires two years of supervised training program that must be conducted in Mansoura University Hospital, pediatric nephrology unit before sitting for the final examination.

Total credit hours: 40 hours.

The program has 4 semesters (each semester is 6 months)::

- **Semester I:** include basic science and include:
 - Applied anatomy and embryology of kidney and urinary tract
 - Applied physiology of the kidney and urinary tract
 - Applied pathology of pediatric kidney and urinary tract diseases
 - Applied pharmacology of pediatric kidney and urinary tract diseases



تاريخه

- **Semester II** include :
 - Glomerular disorders
 - Renal microangiopathies
 - Interstitial renal disease
 - Feto-maternal-neonatal- pediatric interface urinary tract

- **Semester III** : include
 - Inherited renal diseases
 - Tubular disorders
 - Hypertension and renovascular disease
 - Acute kidney injury (AKI)

- **Semester IV**: include
 - Chronic kidney disease (CKD)
 - Complications of chronic kidney disease
 - Renal replacement therapy

8. Program Regulation

During the entire training program, the candidate must be dedicated full time and must be fully responsible for patient care under supervision of fellowship trainers.

Trainees Duties and obligations

1. The trainees should attend and participate. Attendance and participation should not be less than 75% of the total number of activities within any training rotation / period including:
 1. Daily morning patients' rounds and meetings.
 2. Clinical round presentation, at least once weekly to cover various topics, problems or research.
 3. Journal club meeting.
 4. Interdepartmental meetings/ morbidity and mortality meetings.
 5. Grand staff rounds.

2. Trainees should be actively involved and fully responsible for patient care including sharing in making decisions about diagnosis and management under supervision of the consultants.



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3. Trainees should be responsible (under supervision) for outpatient and in patients' routine work.
4. Trainees must take supervised shifts according to the hospitals requirements and regulations.
5. Trainees should be responsible for supervised admission of the patients from the OPD or the ER.
6. Trainees should share in the completion of the following documents under supervision.
 6. Complete history and physical examination form.
 7. Investigation requests, (laboratory, radiology, pathology, etc.).
 8. Reporting results of the investigations
 9. The plan of management after consultation and approval from supervisors
 10. Daily progress notes.
 11. Order medication sheets
 12. Order the necessary diagnostic procedures
 13. Discussion of the case with the trainer and consultants
 14. Discharge summaries.
 15. Sick leaves and medical reports
7. Trainees should inform the senior staff of any high-risk patient admission.
8. The trainees should attend the nephrology outpatient clinics & clinics related to the rotation in different subspecialties as requested by trainers & supervisory staff. They should participate in different patients' interviews and share in management under supervision.
9. By the end the course, the trainees should be able to perform renal ultrasound and insert acute peritoneal catheter. The capability of trainees to perform such minor procedures will be assessed in the log book.

9. Teaching methods:

1. Lectures and scientific seminar
2. Ward rounds
3. Case scenarios
4. Tutorials
5. Self learning
6. Multi-disciplinary meetings



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7. E-learning

Teaching process will be monitored by frequent questionnaire of trainees to check their understanding of the material being taught and conducting periodic reviews with trainees to confirm their grasp of learning material and identify gaps in their knowledge and understanding.

10. Assessment methods:

1. MCQ exam at the end of each semester (ongoing exam at the end of semesters: the student will be transferred from one semester to the next whatever the score then to the written exam)
1. Clinical exam OSCE
2. Written exam (Knowledge, Intellectual skills, Communication & Transferable skills)
3. Structural oral exam



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نظام الامتحان وتوزيع الدرجات

امتحان الجزء الأول

إجمالي	الدرجة			الاختبار	المقرر
	عملي	شفهي	MCQ		
١٠٠			20	80	امتحان تفريدي مدته ساعة ونصف تشریح وتطور جنسي تطبيقي لأمراض كلتي الأطفال
١٠٠			20	80	امتحان تفريدي مدته ساعة ونصف فسيولوجي تطبيقي لأمراض كلتي الأطفال
١٠٠			20	80	امتحان تفريدي مدته ساعة ونصف بساتولوجي تطبيقي لأمراض كلتي الأطفال
١٠٠			20	80	امتحان تفريدي مدته ساعة ونصف الفارماكولوجية التطبيقية لأمراض كلتي الأطفال

الامتحان النهائي

إجمالي	الدرجة			الاختبار	المقرر
	شفهي وعملي	تفريدي	MCQ		
٣٠٠	١٢٠	١٢٠	٦٠	الامتحانات الفصلية MCQ اختبار تفريدي مدته ٢ ساعات . اختبار عملي و شفوي.	أمراض كلتي الأطفال



باسم ابدا

11. References of the course

Essential textbooks:

1. Clinical Pediatric Nephrology by Karrwal K. Kher, H. William Schnaper, Larry A. Greenbaum, 3rd edition 2017
2. Critical Care Pediatric Nephrology and Dialysis: A practical Handbook; Sidharth Kumar Sethi, Rupesh Raina, Mignon McCulloch, Timothy E. Bunchman, Editors 2019.
3. Manual of Pediatric nephrology by Kishore Phadke, Paul Goodyer, Martin Bitzan Editors; 2014

Recommended books for further readings:

5. Comprehensive pediatric nephrology 2nd ed. by Denis F Geary (Editor), Franz Scafer (Editor) 2008.

Periodicals:

7. Pediatric Nephrology Journal (Official journal of International Pediatric Nephrology Association).
8. Global Kidney Academy: <http://www.globalkidneyacademy.co.uk>

12. Facilities and resources mandatory for course completion:

1. Lecture halls:
2. Library:
3. Facilities for tutors:
 - 3.1 computers and high speed internet connection.
 - 3.2 international databases.
4. Inpatients ward:
5. Outpatients clinic
6. Hemodialysis unit.
7. Well equipped lab
8. Well equipped radiology department
9. Well equipped pathology lab



لائحة الدبلومة المهنية في تخصص أمراض الكلى للأطفال
Pediatric Nephrology Professional Diploma (PNEPH 400)

القسم المانح للدرجة : طب الأطفال

Department of Pediatrics

المقررات الدراسية وتوزيع الساعات المعتمدة

الساعات المعتمدة		الكود	Course	المقرر	
الإجمالي	المقرر				
4	1	PNPEPH 401	Applied anatomy and embryology of kidney and urinary tract	تشريح وتطور جنيني تطبيقي (الكلى ومجري البول)	الفصل الدراسي الأول
	1	PNPEPH 403	Applied physiology of kidney and urinary tract	فسيولوجي تطبيقي (الكلى ومجري البول)	
	1	PNPEP 405	Applied pathology of pediatric renal diseases	باثولوجي تطبيقي لأمراض كلى الأطفال	
	1	PNPEPH 406	Basic principles of diagnosis and treatment of pediatric renal diseases	الفارماكولوجية التطبيقية لأمراض كلى الأطفال	
18	6	PNPEPH 409 M1	Pediatric renal diseases module I	أمراض كلى الأطفال	الفصل الدراسي الثاني والثالث والرابع
	6	PNPEP 409 M2	Pediatric renal diseases module II		
	6	PNPEPH 409 M3	Pediatric renal diseases module III		
18	8	PNPEPH 409Pr	Clinical Nephrology	أنشطة علمية متعلقة بأمراض كلى الأطفال المختلفة تشمل التدريب الإكلينيكي والميداني وورش العمل	كراسة الأنشطة
	2		Nephrology Critical care		
	8		Renal replacement therapy		
40	إجمالي الساعات المعتمدة				



باسم الله

نظام الامتحان وتوزيع الدرجات

امتحان الجزء الأول

إجمالي	الدرجة				الاختبار	المقرر
	عملي	شفهي	MCQ	تحريري		
١٠٠			20	80	امتحان تحريري مدته ساعة ونصف	تشريح وتطور جنيني تطبيقي لأمراض كلى الأطفال
١٠٠			20	80	امتحان تحريري مدته ساعة ونصف	فسيولوجي تطبيقي لأمراض كلى الأطفال
١٠٠			20	80	امتحان تحريري مدته ساعة ونصف	باثولوجي تطبيقي لأمراض كلى الأطفال
١٠٠			20	80	امتحان تحريري مدته ساعة ونصف	الفارماكولوجية التطبيقية لأمراض كلى الأطفال

الامتحان النهائي

إجمالي	الدرجة			الاختبار	المقرر
	شفهي وعملي	تحريري	MCQ		
٣٠٠	١٢٠	١٢٠	٦٠	الامتحانات الفصلية MCQ اختبار تحريري مدته ٢ ساعات . اختبار عملي و شفوي.	أمراض كلى الأطفال

شروط القيد في الدبلومة المهنية لأمراض كلى الأطفال:

- ١- خريجي كليات الطب البشري علي ان يكون حاصل على درجة الماجستير في طب الأطفال علي الأقل او ما يعادلها (زمالة- بورد- الخ).
- ٢- يحدد عدد المقبولين حسب احتياجات الوحدة السنوية



تامر ابيها