Course description of the program offered by Basrah University (college of medicine)

2023 - 2024

Assistant prof. Dr Mohammed Younus Naji Al Atbee

1- university and college	University of Basrah , College of medicine
2-department	Medicine
3- course	Nephrology
4- available methods of attendance	Classroom for theory
3- year	2023 - 2024
6- hours\ course	
10-Date of production	11\9\2023

Aim of programme:
-high level of scientific knowledge of nephrology
- high level of practical skill in learning case problems in nephrology field.

-

-

Learning outcome , teaching , learning and assessment methods

cognative goals :

- Area learning outcomes and assessment methods for nephrology lecturers for medical students can help ensure that students acquire the necessary knowledge and skills in this field. Here are some potential learning outcomes and assessment methods:
-
- *Learning Outcomes:*
-
- 1. *Understanding Renal Anatomy and Physiology:*
- - Describe the structure and function of the kidneys.
- - Explain the filtration and reabsorption processes in the nephron.
- - Understand the regulation of blood pressure and electrolyte balance by the kidneys.
-
- 2. *Diagnosis of Renal Diseases:*
- - Recognize common signs and symptoms of renal diseases.
- - Interpret laboratory tests like serum creatinine, glomerular filtration rate (GFR), and urinalysis.
-
- 3. *Treatment Modalities:*
- - Explain various treatment options for renal diseases, including medications, dialysis, and transplantation.
- - Understand the principles of dialysis and its different modalities.
-
- 4. *Management of Renal Patients:*
- - Develop skills in patient evaluation, history taking, and physical examination related to renal disorders.
- - Formulate treatment plans and follow-up strategies for renal patients.
-
- 5. *Research and Critical Thinking:*

- - Analyze and critique research articles related to nephrology.
- - Apply evidence-based medicine principles in clinical decision-making.
-
- *Assessment Methods:*
-
- 1. *Written Examinations:* Use multiple-choice questions, short-answer questions, and essay questions to assess theoretical knowledge.
-
- 2. *Clinical Vignettes:* Present case scenarios to test students' ability to diagnose and manage renal diseases.
-
- 3. *Objective Structured Clinical Examination (OSCE):* Evaluate clinical skills, including history taking, physical examination, and communication with renal patients.
-
- 4. *Laboratory Reports:* Assign tasks where students must interpret lab results related to renal function.
-
- 5. *Research Projects:* Require students to conduct literature reviews, design experiments, or analyze data related to nephrology topics.
-
- 6. *Presentations:* Have students present on specific nephrology cases or research findings to assess their communication and presentation skills.
-
- 7. *Simulation Exercises:* Use simulated renal cases or virtual patients to assess decision-making and clinical skills.
-
- 8. *Peer Assessment:* Encourage students to provide feedback on each other's presentations or clinical skills, fostering peer learning.
-
- 9. *Longitudinal Assessment:* Assess students' progress and understanding of nephrology concepts throughout the course, not just at the end.
-
- 10. *Final Clinical Rotation Evaluation:* If applicable, evaluate students during their clinical rotations in nephrology, assessing their ability to apply knowledge in a real clinical setting.
-
- These learning outcomes and assessment methods can help ensure that medical students receive comprehensive education in nephrology and are adequately prepared to diagnose and manage renal diseases in clinical practice.

skill goals special to the programme:

- In nephrology lectures for medical students, the following skills goals are essential for ensuring that students develop the necessary clinical skills and competence in this specialty:
-
- 1. *Clinical Assessment Skills:*
- - Ability to perform a thorough renal-focused physical examination.
- - Proficiency in assessing vital signs and recognizing abnormalities related to renal function.
-
- 2. *Diagnostic Skills:*
- - Competence in interpreting laboratory results relevant to nephrology, including serum creatinine, GFR, electrolytes, and urinalysis.
- - Skill in diagnosing common renal conditions such as acute kidney injury, chronic kidney disease, and nephrotic/nephritic syndromes.
-
- 3. *Communication Skills:*

- - Effective communication with patients regarding their renal condition, treatment options, and prognosis.
- - Ability to provide clear and empathetic explanations to patients and their families.
-
- 4. *Decision-Making Skills:*
- - Capability to develop appropriate treatment plans for renal patients, considering factors like disease stage, comorbidities, and patient preferences.
- - Skill in making timely referrals for specialized nephrology care or interventions.
-
- 5. *Dialysis Management:*
- - Proficiency in managing patients on various dialysis modalities, including hemodialysis and peritoneal dialysis.
- - Knowledge of dialysis access management and potential complications.
-
- 6. *Medication Management:*
- - Ability to prescribe and monitor medications commonly used in nephrology, such as diuretics, antihypertensives, and erythropoietin-stimulating agents.
- - Skill in adjusting medication regimens based on renal function.
-
- 7. *Procedural Skills:*
- - Competence in performing common nephrology procedures, like kidney biopsy or central line placement.
- - Ensuring patient safety during these procedures.
-
- 8. *Patient Education:*
- - Capability to educate patients about dietary restrictions, fluid management, and lifestyle modifications to manage renal conditions.
- - Ability to provide guidance on medication adherence and self-care.
-
- 9. *Research and Critical Appraisal Skills:*
- - Proficiency in reviewing nephrology research literature and critically evaluating the evidence.
- - Skill in applying research findings to clinical practice for evidence-based care.
-
- 10. *Interprofessional Collaboration:*
- - Ability to work effectively within a healthcare team, including nephrologists, nurses, dietitians, and social workers.
- - Collaborative approach to patient care that considers the multidisciplinary nature of nephrology.
-
- 11. *Ethical and Cultural Competence:*
- - Understanding of ethical dilemmas in nephrology, such as end-of-life decisions and organ transplantation.
- - Cultural competence to provide care that respects the diverse backgrounds and beliefs of patients.
-
- 12. *Continuous Learning:*
- - Commitment to staying updated on the latest advances in nephrology through ongoing medical education and professional development.
-
- These skills goals should be integrated into nephrology lectures and clinical training to ensure that medical students are well-prepared to diagnose, manage, and provide compassionate care to patients with renal conditions.

.

learning and teaching

- Nephrology lectures for medical students should cover a range of learning and teaching points to ensure a comprehensive understanding of the field. Here are some key learning and teaching points:
-
- *Learning Points:*
-
- 1. *Renal Anatomy and Physiology:*
- - Structure and function of the kidneys.
- - Nephron anatomy and filtration processes.
- - Regulation of electrolyte balance and blood pressure.
-
- 2. *Renal Function Tests:*
- - Interpretation of serum creatinine, GFR, BUN, and urinalysis.
- - Understanding the significance of these tests in diagnosing renal conditions.
-
- 3. *Acute Kidney Injury (AKI):*
- - Causes, risk factors, and stages of AKI.
- - Management strategies for AKI.
-
- 4. *Chronic Kidney Disease (CKD):*
- - Staging and progression of CKD.
- - Management of complications and comorbidities associated with CKD.
-
- 5. *Nephrotic and Nephritic Syndromes:*
- - Differentiating between nephrotic and nephritic syndromes.
- - Common causes and management approaches.
-
- 6. *Hypertension and Renal Disease:*
- - The relationship between hypertension and kidney disease.
- - Management of hypertension in patients with kidney disease.
-
- 7. *Dialysis Modalities:*
- - Overview of hemodialysis and peritoneal dialysis.
- - Indications, complications, and management of dialysis patients.
-
- 8. *Renal Transplantation:*
- - Evaluation of transplant candidates.
- - Immunosuppressive therapy and post-transplant care.
-
- 9. *Fluid and Electrolyte Imbalances:*
- - Understanding and managing imbalances in sodium, potassium, calcium, and phosphate.
-
- 10. *Renal Stones:*
- - Types of renal stones and their causes.
- - Treatment options and prevention strategies.
-
- 11. *Infections and Renal Disease:*
- - Common infections affecting the kidneys.
- - Appropriate antibiotic therapy and management.
-

- 12. *Pediatric Nephrology (if included):*
- - Unique considerations in diagnosing and managing kidney conditions in children.
-
- *Teaching Points:*
-
- 1. *Interactive Lectures:* Engage students through case-based discussions, questions, and discussions to encourage active learning.
-
- 2. *Clinical Case Studies:* Present real or hypothetical patient cases to illustrate the application of nephrology principles in clinical practice.
-
- 3. *Visual Aids:* Use diagrams, images, and models to explain renal anatomy and processes.
-
- 4. *Laboratory Demonstrations:* If feasible, provide demonstrations of renal function tests and urinalysis in the lab.
-
- 5. *Guest Speakers:* Invite nephrology specialists or patients with renal conditions to share their experiences and insights.
-
- 6. *Problem-Based Learning:* Assign scenarios or patient cases for students to research and present solutions.
-
- 7. *Simulation Exercises:* Use medical simulation technology to practice clinical skills, such as placing central lines or performing kidney biopsies.
-
- 8. *Team-Based Learning:* Encourage collaboration among students to solve complex nephrology cases or work on research projects.
-
- 9. *Peer Teaching:* Allow students to teach and explain nephrology topics to their peers, promoting deeper understanding.
-
- 10. *Assessment:* Regularly assess student understanding through quizzes, exams, and clinical evaluations to ensure they meet the learning objectives.
-
- 11. *Feedback:* Provide constructive feedback on students' clinical skills, patient interactions, and research projects to facilitate improvement.
-
- 12. *Resources:* Recommend textbooks, articles, and online resources for further reading and self-study.
-
- By incorporating these learning and teaching points into nephrology lectures, educators can help medical students build a strong foundation in nephrology and prepare them for clinical practice in this specialized field.

Assessment method:

Assessment methods in nephrology lectures for medical students should evaluate their understanding of the subject matter, clinical skills, and ability to apply knowledge to real-world scenarios. Here are several effective assessment methods for nephrology lectures:

1* .Written Examinations*:
- Multiple-choice questions: Assess knowledge of nephrology concepts.
- Short-answer questions: Require concise explanations of key principles.
- Essay questions: Encourage in-depth analysis and critical thinking about nephrology topics.

2* .Clinical Case Presentations*:
- Assign students to present and discuss nephrology cases, demonstrating their diagnostic and management skills.
- Use a panel of faculty or experts to evaluate the quality of presentations.

3* .Objective Structured Clinical Examination (OSCE)*:
- Create stations where students must perform specific nephrology-related tasks, such as interpreting lab results, conducting a patient history, or explaining treatment options.
- Assess communication and clinical skills in a controlled, standardized setting.

4* .Clinical Skills Assessment*:
- Observe students during clinical rotations in nephrology clinics or hospital wards.
- Evaluate their ability to perform a renal-focused physical examination, interact with patients, and make clinical decisions.

5* .Laboratory Interpretation*:
- Provide students with lab reports related to renal function and ask them to interpret the results, make diagnoses, and suggest appropriate interventions.

6* .Patient Case Write-ups*:
- Require students to document patient cases they encounter during clinical rotations.
- Evaluate their ability to compile comprehensive patient histories, physical exam findings, and diagnostic plans.

7* .Oral Examinations*:
- Conduct one-on-one or small-group oral exams where students discuss nephrology topics with faculty members.
- Evaluate their depth of understanding, ability to articulate concepts, and clinical reasoning.

8* .Research Projects and Presentations*:
- Assign research projects on nephrology topics, encouraging students to conduct literature reviews and present their findings.
- Evaluate their research skills, critical thinking, and ability to communicate research outcomes.

9* .Peer Assessment*:
- Encourage students to evaluate and provide feedback on their peers' presentations, clinical skills, or case write-ups.
- Promote self-assessment and peer learning.

10* .Simulation Exercises*:
- Use medical simulation technology to assess students' procedural skills, such as kidney biopsies or catheter placement.
- Evaluate their performance in controlled, realistic scenarios.

11* .Longitudinal Assessment*:
- Assess students' progress and understanding throughout the course or clinical rotations rather than relying solely on a final exam.
- Consider continuous evaluation of clinical skills, patient interactions, and knowledge acquisition.

12* .Online Quizzes and Interactive Modules*:
- Use e-learning platforms to provide students with interactive quizzes and modules covering nephrology topics.

- Track their progress and understanding of the material.

13* .Group Projects*:
- Assign group projects that require students to collaborate on solving nephrology-related clinical or research problems.
- Assess teamwork, problem-solving, and presentation skills.

14* .Clinical Preceptor Evaluations*:
- Ask clinical preceptors to provide feedback on students' clinical performance during their nephrology rotations.

- A combination of these assessment methods can provide a comprehensive evaluation of medical students' knowledge, clinical skills, and readiness to practice nephrology. It's important to align assessments with the learning objectives of the course and provide constructive feedback to help students improve.

-

Course structure

Method of assessement	Method of teaching	subject	Learning outcome	hours	week
Discussion Short examine questions	Lectures	Functional anatomy and physiology	Major Functions of the Kidneys	1	1
Discussion Short examine questions	Lectures	Examination of urine (urinalysis, general urine exam GUE)	Learning about urinalysis is an informative and noninvasive diagnostic tool	1	2
Discussion Short examine questions	Lectures	Glomerular disease	Studying inflammation on kidney biopsy histology, glomerular disease that may be described as a glomerulonephritis.	2	3
Discussion Short examine questions	Lectures	Glomerular disease specific diseases	Studying minimal change disease is the leading cause of nephrotic syndrome	2	4
Discussion Short examine questions	Lectures	Renal involvement in systemic diseases	Studying kidneys may be directly involved in a number of multisystem diseases or secondarily affected by diseases of other organs	2	5
Discussion Short examine questions	Lectures	Electrolytes disturbance ,hyperkalemia Hypokalemia	Studying causes and clinical features of electrolytes disturbance	2	5

Discussion Short examine questions	Lectures	DISORDERS OF ACID–BASE BALANCE	Studying the disorder of acid base disturbance	2	5

Infra structure	
Books required reading: * * * * *	Davidson’s Principles and Practice of medicine Toronto Notes 2022
Main references	When preparing nephrology lectures for medical students, it's important to use authoritative and up-to-date references to ensure the accuracy and relevance of the content. Here are some main references commonly used in nephrology education: 1. *"Brenner and Rector's The Kidney"* by Maarten W. Taal, Glenn M. Chertow, Philip A. Marsden, et al. - This comprehensive textbook is considered a standard reference in nephrology. It covers the entire field of nephrology, including renal physiology, diseases, and management. 2. *"Comprehensive Clinical Nephrology"* by Richard J. Johnson, John Feehally, and Jurgen Floege. - This book offers a detailed and practical approach to clinical nephrology, making it valuable for medical students looking to understand renal diseases and their management. 3. *"Nephrology Secrets"* by Edgar V. Lerma and Allen R. Nissenson. - This is part of the popular "Secrets" series and provides a concise overview of key nephrology topics, making it suitable for students seeking a quick reference. 4. *"Clinical Physiology of Acid-Base and Electrolyte Disorders"* by Burton David Rose and Theodore W. Post. - This book focuses specifically on acid-base and electrolyte disorders, which are essential topics in nephrology.

Recommended books and journals	1. *"Pocket Nephrology"* by Mark A. Perazella. - This pocket-sized book offers a quick reference to common nephrology topics, making it convenient for medical students on clinical rotations. 2. *"Nephrology in 30 Days"* by Robert Reilly and Mark Perazella. - Geared towards medical students and residents, this book provides a concise overview of nephrology concepts and can be useful for exam preparation. 3. *"Nephrology and Hypertension Board Review"* by Phuong-Chi T. Pham and Phuong-Thu T. Pham. - This book is designed for board exam preparation but can also serve as a comprehensive review for medical students. 4. *"UpToDate"* (Online Resource) - UpToDate is a reliable online resource frequently used by medical professionals to access the latest clinical information and guidelines on nephrology topics. 5. *Renal Physiology Lectures and Materials* - Many medical schools provide their own lecture materials and resources for nephrology. These materials are often aligned with the curriculum and may include lecture notes, slides, and case studies. 6. *Nephrology Journals* - Encourage students to explore nephrology journals such as the "American Journal of Kidney Diseases" and "Nephrology Dialysis Transplantation" for research articles and updates in the field. --

Electronic references and web sites-	Electronic references and websites can be valuable resources for nephrology lectures for medical students. Here are some reputable electronic references and websites to consider: 1. *National Kidney Foundation (NKF) - Kidney Disease Outcomes Quality Initiative (KDOQI):* - Website: [NKF KDOQI](https://www.kidney.org/professionals/guidelines) - Provides evidence-based clinical practice guidelines and recommendations on various aspects of kidney disease, including CKD, hypertension, and hemodialysis. 2. *American Society of Nephrology (ASN):* - Website: [ASN](https://www.asn-online.org/) - Offers educational resources, research updates, and access to the latest nephrology research and clinical guidelines. 3. *National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK):* - Website: [NIDDK](https://www.niddk.nih.gov/) - Provides educational materials, research information, and clinical resources related to kidney diseases and disorders. 4. *Renal Fellow Network:* - Website: [Renal Fellow Network](https://www.renalfellow.org/) - A blog-style website featuring case discussions, educational posts, and practical insights for nephrology trainees and students. 5. *eMedicine - Nephrology:* - Website: [eMedicine Nephrology](https://emedicine.medscape.com/nephrology) - Offers a collection of articles and clinical reference materials on various nephrology topics, including diseases

	and treatment options. 6. *American Journal of Kidney Diseases (AJKD):* - Website: [AJKD](https://www.ajkd.org/) - Access to research articles, review papers, and clinical studies related to nephrology. 7. *Nephron Power:* - Website: [Nephron Power](https://www.nephronpower.com/) - A nephrology blog with educational content, case discussions, and updates on recent research in the field. 8. *Online Medical Textbooks:* - Websites like [Medicine LibreTexts](https://med.libretexts.org/Bookshelves/Medicine) and [Merck Manual](https://www.merckmanuals.com/professional), which offer free access to online medical textbooks, can be helpful for in-depth study. 9. *YouTube Nephrology Channels:* - Channels such as [Nephrology On-Demand](https://www.youtube.com/c/NephrologyOnDemand) and [AJKD Podcasts](https://www.youtube.com/c/AJKDpodcasts) provide video lectures and discussions on nephrology topics. 10. *PubMed:* - Website: [PubMed](https://pubmed.ncbi.nlm.nih.gov/) - A database for accessing a vast collection of nephrology research articles and publications. 11. *KidneyAtlas:* - Website: [KidneyAtlas](https://www.kidneyatlas.org/) - Offers a comprehensive atlas of renal pathology with high-quality images and educational content. When using online resources, always ensure that the information is up-to-date and from reputable sources.

	Additionally, check if your institution provides access to specific nephrology databases and resources that may be beneficial for your lectures and student learning.

The planned development plan :

Developing a robust and effective plan for nephrology lectures for medical students involves considering both the content and the teaching methods. Here's a development plan to enhance nephrology lectures:

1. Curriculum Review:
- Assess the existing nephrology curriculum to identify strengths and areas for improvement.
- Review the learning objectives and ensure they align with the latest medical standards and guidelines.

2. Updated Content:
- Regularly update lecture content to reflect the latest advancements, research, and clinical guidelines in nephrology.
- Include emerging topics such as precision medicine in nephrology or innovations in renal replacement therapy.

3. Interactive Learning:
- Incorporate interactive teaching methods like case-based learning, group discussions, and problem-solving exercises to engage students actively.
- Encourage students to ask questions and participate in class discussions.

4. Clinical Integration:
- Strengthen the connection between lectures and clinical practice by incorporating real patient cases and experiences.
- Provide opportunities for students to shadow nephrologists and participate in clinical rotations.

5. Technology Integration:
- Utilize technology, such as online platforms, virtual simulations, and e-learning modules, to enhance lectures and provide supplementary resources.
- Consider using multimedia presentations, animations, and interactive simulations to explain complex nephrology concepts.

6. Formative Assessment:
- Implement formative assessments throughout the course to gauge students' understanding and progress.
- Use quizzes, polls, and peer evaluations to provide feedback and help students identify areas for improvement.

7. Clinical Skills Training:
- Develop a structured approach to teach clinical skills relevant to nephrology, including physical examination techniques, interpreting lab results, and dialysis procedures.
- Consider hands-on workshops or simulation exercises for practical training.

8. Guest Lecturers and Experts:
- Invite guest speakers, experienced nephrologists, or patient advocates to share their insights and experiences.
- Offer diverse perspectives and expertise within the field.

9. Research Opportunities:
- Encourage students to explore research opportunities in nephrology, fostering an interest in academic and clinical research.
- Support students in presenting their research findings at conferences or publishing in medical journals.

10. Continuous Evaluation:
- Regularly gather feedback from students about the effectiveness of lectures and teaching methods.
- Use feedback to make adjustments and improvements to the curriculum.

11. Multidisciplinary Approach:
- Emphasize the importance of multidisciplinary care in nephrology by collaborating with other healthcare professionals (e.g., nurses, dietitians, social workers).
- Include interdisciplinary case studies and discussions.

12. Ethical and Cultural Competence:
- Integrate discussions on ethical dilemmas in nephrology, end-of-life decisions, and cultural competence into the curriculum.
- Prepare students to address sensitive issues with empathy and professionalism.

13. Professional Development:
- Support faculty members with continuous professional development opportunities to stay updated on nephrology advancements and teaching methodologies.

14. Evaluation and Feedback Mechanisms:
- Establish a system for evaluating the effectiveness of the nephrology curriculum and make improvements based on data and feedback.

15. Longitudinal Assessment:
- Consider implementing longitudinal assessment methods that track student progress throughout the nephrology course and clinical rotations.

A well-structured development plan ensures that nephrology lectures for medical students remain relevant, engaging, and effective in preparing them for clinical practice in this specialized field. It also promotes a culture of continuous improvement in nephrology education.

-