



School of Medicine

**Final med Nephrology clinical
undergraduate training
- *Tallaght University Hospital***

All care is taken to ensure that the information in this handbook is correct at the time of going to print.

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SPECIALTY:	Nephrology - www.tcd.ie/medicine/thkc/education/
CONSULTANT:	Prof G. Mellotte (Team B), Prof C Wall (Team A), Prof P Lavin (Team A), Dr B Griffin (Team B), Prof M Little (Team A), Dr Frank Ward (Team A), Dr Donal Sexton (Team B)
HOSPITAL:	Trinity Health Kidney Centre, Tallaght Hospital
YEAR OF COURSE:	5

Introduction and objectives – 5th Medical Year

Lists of your learning objectives and suggested background reading are listed on Blackboard, but we hope that we might stimulate you to explore the subjects further. Inevitably the nature of clinical teaching will mean that some areas may not be covered directly; please read as widely as you can to complement the course work. We will cover most of the curriculum but additional reading around the subjects covered is expected.

Before starting you should ensure that you have revised/reviewed the following basic knowledge and skills. This minimum level of understanding and competence will be assumed.

1. Taking a structured renal history and performing a physical examination
2. Surface anatomy of the abdomen
3. Construction of a synopsis or problem list based on the clinical assessment of a patient
4. The relevance of cardiovascular physiology, including:
 - a. Pulse and blood pressure as a guide to fluid status
 - b. Abnormalities in pulse and blood pressure as indicators of severity of illness
 - c. The JVP as a measure of right heart pressure
5. An understanding of renal physiology, including:
 - a. Renal blood flow
 - b. Glomerular filtration and its measurement
 - c. Tubular function
6. A basic understanding of the following renal conditions:
 - a. Acute kidney injury
 - b. Chronic kidney disease
 - c. Nephrotic syndrome
 - d. Nephritic syndrome
7. Normal regulation of body water and sodium by the RAAS and ADH - how abnormalities of RAAS and ADH arise and then give rise to changes in water and sodium homeostasis
8. Immunology:
 - a. The normal immune system
 - b. Autoantibodies: what are they and how they might cause damage?
 - c. ELISA
 - d. Drugs which alter the immune response in transplantation and autoimmunity
9. Basic pharmacology

Teaching structure: 5th Medical year clinical attachment

The final medical year Nephrology teaching is delivered in Tallaght hospital by **Prof George Mellotte, Prof Catherine Wall, Dr Peter Lavin, Dr Frank Ward, Dr Brenda Griffin, Dr Donal Sexton and Prof Mark Little**, as well as by senior members of the NCHD team and nursing staff. The renal pharmacy

service (led by **Dawn Davin**) will arrange a dedicated session to discuss the key medications of importance in Nephrology, and the impact of reduced kidney function on pharmacokinetics.

Michaelmas Term

Seven full class lectures covering the following topics:

- Acute Kidney Injury
- Chronic Kidney Disease
- Glomerulonephritis
- Dialysis / Transplantation
- Electrolyte disturbance
- Clinico-Pathological Conference

Clinical specialty rotations

You will shadow the consult and GIM (General Internal Medicine) registrars and will be expected to see and assess new nephrology consults on the wards or emergency department. There may also be one or more third medical year students attached to the firm. Your primary supervising consultant will be the on-call consultant. The cornerstone of the teaching week is the Monday morning teaching rounds described below. Each elective period is x3 weeks in duration, with x2 weeks attached to the team and attending all team activities and then x1 week shadowing an intern.

Acid base / electrolyte / kidney disease teaching rounds

Location	Renal seminar room, Vartry Renal Unit, each Thursday at 1pm for 1 hour
Attendees	All 3rd meds attached to renal, any 5th med attached to renal, interns and SHOs of renal firm. In view of the requirement for social distancing a maximum of 6 masked people can attend in person. Virtual attendance will be possible via MS Teams.
NCHD Coordinator	Osborne or Consult registrar
Consultant Coordinator	Rotates, usually the consultant on call

1-2 cases to be prepared weekly, 1 covering an acid base or electrolyte disorder referred to the renal team (consult service or inpatient service) and 1 dealing with a kidney disorder (acute kidney injury / glomerular disease / etc). Cases are to be chosen in discussion with the consult, Osborne or GIM registrar.

The presentation should include a relevant brief history and results of preliminary investigations. The case should be presented as a diagnostic challenge with information withheld to allow for discussion around potential diagnosis / differentials / further diagnostics and interpretation of same. You will need an up to date medication list for the patient including drugs taken prior to admission / OTCs and drugs discontinued. This list should not be presented until the facilitator questions you regarding drug therapy. One person should present each case and the facilitator will review the data and bring the group through the diagnostic process by asking for their input as well as requesting results of further investigations / medications etc. It is therefore essential that not all results are presented at the outset, rather a summary of the problem.

It is not necessary to present these cases electronically – but a typed synopsis of the case to be discussed will be useful for the group.

Case example 1

You are asked to see a 51 year old man with a serum potassium of 6.7mmol/l and sodium of 129mmol/l. He has newly diagnosed inoperable pancreatic neuroendocrine tumour. His creatinine has risen from 60 to 160 over the last 10 days. Can you please see and advise on the likely cause of the above as well as recommend appropriate treatment?

Case example 2

You are consulted on a 72 year old woman with worsening leg swelling for the last 3 weeks. The initial working diagnosis was of CCF but her ECHO is normal and BNP is <500. She has a creatinine of 110umol/l and urine dip reveals 2+ protein. She is anaemic with a Hb of 9.7g/dl. Can you please see and advise?

Proposed attachment timetable

IMPORTANT CONTACT NUMBERS

Consult registrar (primary point of contact): 3689

Osborne registrar: 7068

GIM registrar: 3685

GIM SHO: 3687

Haemodialysis registrar (primary point of contact): 7041

Dr Arwa Shuhaiber (Haemodialysis staff grade): arwa@beaconrenal.ie

We suggest that you establish a WhatsApp group or similar with the Osborne and Dialysis team to facilitate communication.

Weeks 1 and 2: Shadow consult and GIM team and act as the first assessor for undifferentiated Nephrology consults. We strongly recommend that you spend at least one evening in the emergency department with GIM registrar when the Nephrology team is on take. Find out from the GIM registrar when the team is on call and organise to do a few hours with the team in the emergency department.
Week 3: Shadow Osborne intern.

Teaching, attendance/tasks during rotation

- Present to Intern
- Present to Registrar
- Present at Thursday teaching meeting (Renal nurses office, dialysis unit)
- Present at Tuesday lunchtime MDT meeting (Osborne ward – virtual during covid restrictions)
- Observe 1 Wednesday Clinic
- Observe 1 Friday Clinic
- Attend On Call with Team

Ten clinical pearls you should endeavour to observe when attached the nephrology service:

- 1. Feel and auscultate an arteriovenous fistula**
- 2. Observe use of a tunnelled haemodialysis catheter**
- 3. Palpate a transplant kidney**
- 4. Assess the volume status of at least 5 patients**
- 5. Perform a urinalysis**
- 6. Witness a patient being attached to a haemodialysis machine**

7. Witness a peritoneal dialysis exchange
8. Assess and present a patient presenting with acute kidney injury
9. Meet with the anaemia nurse to get an introduction to erythropoietin prescribing
10. Present a case at Monday morning teaching rounds

Renal unit calendar

	Morning (before 12 noon)	Afternoon (after 12 noon)
Monday	Ward round (nephrology)	Ward round medicine / Consult Round
Tuesday	Nephrology Clinic	1-2pm: Nephrology Seminar 2-3pm: Nephrology MDT / Monthly dialysis / home therapies meetings 3pm: Ward rounds / consults
Wednesday	Transplant Clinic / Obstetric Nephrology Clinic	Ward Round / Consult round
Thursday	Clinical Meeting	1pm. Acid base / electrolyte / kidney disease teaching rounds (Renal Seminar room & MS Teams) Ward Round / Consult round 3pm: Team A tutorial (Dr Ward)
Friday	Grand Rounds Vasculitis and Nephrology Clinic	Ward Round / Consult round
Sat/Sun	On call – ward round / Consult round	On call – ward round / Consult round

Hilary Term

Nephrology CPC

Usually in February or March, this is a full day interactive session where a detailed discussion of one or more cases is linked to didactic teaching on this topic.

Clinical teaching, Tallaght and St James Hospital.

There is a mix of larger group tutorials, Blackboard webinars and small group bed-side tutorials.

- A. On Mondays at 11am Prof Mellotte and Dr Lavin lead sessions in the TUH Trinity Centre covering the theoretical aspects of clinical Nephrology. The group in Tallaght is split into three for these (i.e. 2 pods come together for each lecture). Therefore, every student should receive 2 of these sessions.
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- B. These semi-didactic sessions will be consolidated with small group tutorials and webinars. **Each small group of 8-12 students should receive one tutorial/webinar from Prof Wall, Dr Ward and Prof Little (TUH), and Dr Sexton and Dr Griffin (St James Hospital).** These tutorials will focus on clinical examination of the patient with renal disease, with emphasis on dialysis, transplant kidney palpation and volume status assessment. Details will be posted on Blackboard.

- C. Bedside tutorials with **3 students** maximum (4 per week). These will be delivered from Monday to Thursday by a member of the renal team and should focus on bedside teaching of key systems examination (CV, Resp, GI, Neuro). Please check in with the consult registrar on Monday am.
- a. Monday 14:30 – Cesira McCrohan, meet in the Varty Dialysis Unit
 - b. Tuesday 16:00 – Dr Arwa Shuhaiber, meet in the Vartry Dialysis Unit
 - c. Wednesday – GIM registrar, contact on the morning to arrange time and location
 - d. Thursday 1pm – each student presents a case, meet in the Renal Seminar room

Reading List and Websites

Vital Nephrology. Stein A, Wild J, Cook P. Class Publishing 2004. ISBN 1 85959 102 7

Comprehensive Clinical Nephrology, 2nd edition. ISBN 0723432589 · Mosby · Published July 2003

Primer on Kidney Diseases. 3rd Edition. Academic Press, 2001, ISBN 0122991001

Clinical Physiology of Acid-Base and Electrolyte Disorders, 5th edition, McGraw-Hill, ISBN 0071346821

<http://www.renal.org/>

<http://www.kdigo.org/>