

# Curriculum

## FNB Fellowship

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# RENAL TRANSPLANT

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## I. INTRODUCTION

Renal transplantation is an important sub specialty of Urology. As CKD patient's number is rising, no of patients requiring kidney transplant is also increasing. Also with rising number of hemodialysis patients, vascular access & their problems also is a big concern. Renal transplant is now recognized sub specialty of Urology all over India. Many centers are now coming up with all facilities for transplantation & hence there is growing need of those capable of doing transplants independently. Many students after doing their Urology degree or after doing their MS gen surgery & working in recognized transplant center wish to make career in Transplant. This fellowship is ideal opportunity for them. This fellowship is not only for technical skill enhancement but also to provide in depth understanding of renal transplantation (its physiology, immunology & technicality) & dialysis access related procedures like vascular access, or CAPD..etc. This fellowships is one more step in providing trained & competent transplant surgeons to the society to accomplish mission of "Healthy India".

## II. AIMS & OBJECTIVES OF FELLOWSHIP:

1. To provide basic & advanced training in renal transplantation
2. To produce competent specialists in renal transplant – who can provide highest quality comprehensive care in the subject?
3. To train transplant specialists who can serve as future teachers, trainers & researchers in transplant surgery.
4. To give wide exposure in renal transplantation surgery
5. To understand in depth knowledge of various aspects of renal transplantation.
6. To train to carry out transplant surgery independently.
7. In depth knowledge & understanding of vascular access surgery
8. Exposure to various dialysis related procedures like – CAPD, CVP, Perm Cath insertion, DLC insertion
9. To get understanding of HOTA & brain death concept.
10. To understand technicalities of cadaver organ retrieval
11. To understand all aspects of deceased donor transplantation – like identifying donors, preparing donor for organ retrieval, post-surgery follow up

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12. Exposure to counseling aspects of deceased donor's relatives, understanding the concept of waiting list,
  13. Understanding functioning of NOTTO, SOTTO, ZTCC...etc.

### III. TEACHING & TRAINING:

In post-doctoral fellowships, most learning happens by working in the institute. Working in outpatient clinic, indoor, operation theatre itself contributes to significant teaching & training. However certain structured module needs to be followed.

1. **Working in outpatient clinic** – Taking part in donor evaluation, recipient evaluation, understanding the interpretation of investigations, Identifying recipients to be put on deceased donor list – their check list & UpToDate information to be uploaded. Conducting donor follow up clinic, recipient follow up clinic. Conducting joint clinic with Nephrology Dept. Carry out discussion with senior colleagues.
2. **Indoor** – Taking regular rounds, assessing post-operative patients daily developments, Rounds of admitted old transplant patients for various reasons, Post of care & pre op preparations of various pre transplant procedures like Pre Tx nephrectomy, bladder augmentations, mitrofinoff's procedures...etc. Carry out discussion with seniors in dept.
3. **Operation Room training** – Assisting seniors, doing independent surgeries & assisting juniors in dept. carrying out discussion while doing surgeries.
4. **Lectures** – on important topic – at least once in a week
5. **Journal club** – once in 15 days
6. **Specific areas of training** will be:
  - i. Recipient evaluation & work up to prepare recipients for surgery
  - ii. Renal transplant surgery – Donor & recipient – simple & complex situation.

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- iii. Vascular access surgeries -fistula, graft, their complications.
  - iv. CAPD insertion, managing its complications.
    - v. Preparation of wait listing patient on deceased donor waiting list.
  - vi. Donor evaluation & work up to prepare for surgery
  - vii. Laboratory training to understand methods of tissue typing, cross match studies, how they are done, understanding & interpretation of biopsy
  - viii. Pharmacokinetics /adverse effects & knowledge of drugs used in transplantation
    - ix. Basic aspects of transplant immunology
    - x. Transplant radiology
  - xi. Deceased donor organ retrieval – multiorgan/Kidney retrieval.

#### **IV. SYLLABUS**

Exposure of following aspects during fellowship –

1. Sitting in outpatient clinic to do pre – op evaluation from urological & partly from nephrological point of view.
2. Sitting in follow up outpatient clinic – dealing with recently done transplants as well as old transplant patients.
3. Taking ward rounds, seeing patients who have undergone transplants & also see old patients admitted due to various reasons.
4. Managing complications of transplant – Like lymphocele drainage, marsupialization of lymphocele, DJ stenting, graft nephrectomies ...etc.
5. Coming to operation Theatre – assisting & doing donor nephrectomy, assisting, doing recipient surgeries
6. Be part of deceased organ retrieval team.
7. Assisting /doing kidney biopsies
8. Doing imaging studies – Doppler, USG of all transplant patients.
9. Assisting wherever interventional studies – like angiography / angioplasty are done.
10. Assisting any emergency exploration is required.
11. Assisting /doing any surgery in transplant patient.
12. Coordinating with research team about data analysis
13. Conducting prospective / retrospective studies, filling Performa, in transplant patients.

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14. Assisting / doing vascular access surgeries
  15. Assisting /performing CAPD insertions,
  16. Assisting /doing cannulation during HD, putting IJV, subclavian lines for HD, tunneled catheters.
  17. Interacting with allied dept consultants & rotation in various depts like
    - i. Transplant Nephrologist
    - ii. Transplant pathologist
    - iii. Transplant coordinators
    - iv. Transplant imaging consultants – Radiologists
    - v. Transplant research / data analysis
  18. Participating in weekly transplant meetings & morbidity/mortality meeting of transplants.
  19. Attending / taking lectures weekly
  20. Participating in journal club – fortnightly.
  21. Presenting papers in various conferences & doing publications in index journals.

## **V. COMPETENCIES**

1. He should be able to independently perform donor nephrectomy
2. He should be independently able to perform renal transplantation.
3. Also be able to do various complex situations like multiple artery anastomosis, RT donor kidney with short vein, Etc.
4. He should be able to retrieve cadaver donor kidneys.
5. He should have fair knowledge of pre & post op check list & workup independently.
6. He should have knowledge of other aspects of transplant – like nephrology, counselling, imaging required in transplantation, Transplant immunology, Human organ transplant act
7. He should have acquired good skill & experience of vascular access surgeries, CAPD & other access procedures of HD
8. He should be Presenting papers in national & international conference & done publications in indexed journals
9. He should have maintained log book of his work – as described in log book register.
10. Should have presented papers on transplant topic in zonal/national/international conference.

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11. He should have made publication in pub med indexed journal as first author.

## VI. LOG BOOK

Log book should be maintained as following: In any surgery if 70% part is done by fellow – it will be considered as done independently.

Name of Surgery	Assisted senior	Done independently	Assisted juniors

1. Expected minimum numbers of procedures done independently during 2 years of tenure:
  - i. Lap Donor Nephrectomy – 20
  - ii. Renal transplants – Single artery, single vein - 20
  - iii. Complex renal Transplant (double renal arteries, Rt side donor with short vein) – 5
  - iv. Cadaver organ retrieval – 5
  - v. Simple vascular accesses (radial , brachial AVF) – 100
  - vi. Complex vascular accesses (Transposition surgeries, leg fistulas, grafts...etc) – 20
  - vii. CAPD insertions – 10
  - viii. Transplant kidney biopsies – 10
  - ix. Tunneled cuff catheters, IJV-DLC – 10
  - x. Pre transplant nephrectomy – 10
  
2. Other procedures expected to have assisted –
  - i. Exploration for post Tx bleeding
  - ii. Urine leak – post Tx – reimplant
  - iii. Graft PCN – DJ stenting
  - iv. Post Tx ureteric stricture treatment – Tx ureter to native ureter anastomosis
  - v. Fistula closure
  - vi. Fistula exploration
  - vii. Graft DE clotting

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## VII. RECOMMENDED BOOKS

### Text Books

1. Kidney Transplantation - Principles and Practice 8th edition (Stuart J. Knechtle MD FACS, Lorna P. Marson MB BS FRCS MD, et al.)
2. Handbook Of Kidney Transplantation (Danovitch)
3. Chronic Kidney Disease, Dialysis, and Transplantation: A Companion to Brenner and Rector's The Kidney (Jonathan Himmelfarb MD and T. Alp Ikizler MD)
4. Kidney Transplantation in Sensitized Patients (Duck Jong Han)
5. Challenges in Pediatric Kidney Transplantation: A Practical Guide (Katherine E. Twombly)

### Journals

1. Indian Journal of Transplantation
2. American Journal of Transplantation
3. Nephrology, Dialysis and Transplantation
4. Transplantation Proceedings
5. Transplantation Reviews



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