

**DALHOUSIE
UNIVERSITY**



**QUEEN ELIZABETH II
HEALTH SCIENCES CENTRE**

**Multi-Organ Transplant Program
Dalhousie University**

**RENAL MEDICAL
TRANSPLANT NEPHROLOGY FELLOWSHIP
TRAINING PROGRAM (AST Accredited)**

**Information and Academic Program
July 2017**

Program Director

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1. Introduction

The Kidney Transplant Nephrology Fellowship Program is designed to provide a broad and comprehensive academic and practical experience to the nephrology fellow in kidney transplantation. This is a one-year program accredited by the American Society of Transplantation in September 2012. The Fellowship Program is under the auspices of the Multi Organ Transplant Program of the Queen Elizabeth II Health Sciences Center.

2. Goal

The successful individual at the completion of their training will be sufficiently knowledgeable to direct a Kidney Transplant Program.

3. Learning Requirements

The trainee will develop expertise in the following areas of kidney transplantation through medical, surgical, and research experience and by satisfying the learning requirements of the American Transplant Society.

Pre Kidney Transplant Assessment (30 potential recipients)

- Counseling, evaluation, education and selection of potential recipients for kidney transplantation and simultaneous kidney/ pancreas transplantation.
- Risks and benefits of kidney transplantation versus dialysis.
- Risks and benefits of kidney vs. kidney/pancreas transplantation for diabetics.

Live Kidney Donor Assessment (20 potential donors, surgical assistance in at least 1 live donor nephrectomy)

- Pros and cons of living kidney donation.
- Evaluation, education and counseling of the living related and unrelated kidney donor.
- Short and long term-risks and follow up of the live kidney donor.

Cadaveric Donor (Participation in at least 3 multi-organ retrievals)

- Participation in the identification, evaluation, and maintenance of the cadaveric organ donor.
- Surgical aspects of kidneys, liver, heart and pancreas procurement from the cadaveric multi-organ donors.
- Principles of organ preservation.
-

Kidney Transplantation (Care of at least 30 new kidney transplants and assistance in at least 3 surgical procedures)

- Pre-operative evaluation of patients for kidney or kidney-pancreas transplantation.
- The surgical aspects of kidney transplantation from living and cadaveric donors.
- Knowledge of the immunobiology of transplantation including the normal immune response, immune and inflammatory responses to the allograft and immuno-genetics and tissue typing.
- Detailed knowledge of the mechanisms of action, pharmacology, drug interactions pharmacokinetics, safety, side effect profile, and efficacy of immunosuppressive therapies including newer therapies currently under investigation.
- Detailed knowledge of the mechanisms of action, pharmacology, drug interactions, pharmacokinetics, safety, side effect profile, and efficacy of non-immunosuppressive agents routinely used (such as therapies for hypertension, hyperlipidemia, infection, infection prophylaxis, gout, etc.).
- The administration of induction and maintenance immunosuppressive therapies.
- Expertise in post transplant care: inpatient, outpatient, acute, short-term and long term care.
- Knowledge of the expected clinical outcomes and analysis of risk factors.
- The evaluation and treatment of other immunologic and non-immunologic causes of acute kidney transplant dysfunction.
- The diagnosis and management of acute rejection and early recurrent disease.
- The evaluation and treatment of the surgical complications of kidney transplantation.
- The evaluation, prevention, and treatment of the medical complications including cardiovascular disease, infection, bone disease and malignancy.
- The evaluation and treatment of opportunistic infections in immunosuppressed patients.
- The evaluation and management of chronic allograft dysfunction, including chronic rejection, recurrent disease and de novo disease.
- Indications for and complications of transplant nephrectomy.
- Transition back to dialysis and withdrawal of immunosuppression in failed kidney allografts.
- Evaluation for relisting.
- Special considerations for pancreas and kidney pancreas transplantation and other simultaneous dual transplantations or kidney after other solid organ transplantation.
- Pregnancy in kidney transplantation.

Pediatric Kidney Transplantation (optional)

- Evaluation of children for transplantation.
- Special considerations in living donor and cadaveric transplantation surgery.
- Understanding of special considerations in immunosuppression in children.
- Understanding of issues related to growth and development with transplantation

Tissue Typing (Minimum 2 weeks Tissue Typing Laboratory)

- Principles, methodology, pitfalls and interpretation of tissue typing and cross matching for kidney transplantation (including various lymphocytotoxic assays, flow cytometry, PCR sequence specific DR typing , virtual crossmatching, PRA and cPRA, etc.)

Pathology (Minimum 2 weeks in pathology laboratory)

- Performance (of at least 20) and interpretation of kidney transplant biopsies (including the application of the Banff criteria).

Transplant Management

- The mechanics and ethics of kidney allocation
- Management of kidney transplant wait list. (Attends (80 % transplant meetings), presents, participates and runs waitlist meetings).
- The logistics of multi-organ donor coordination.
- The professional and public promotion of Organ Donor Awareness. (At least one public and one professional presentation)
- Knowledge of other procurement and transplant systems including UNOS (Internet resource), Canadian National Paired Exchange and Highly Sensitized Registry).
- Economics of transplantation.

Transplant Research/Education (Presents minimum of 3 Journal Club meetings, and minimum 4 additional education academic sessions)

- Critical review of transplantation literature.
- Basic research design of an RCT, cohort study, and study of the properties of a diagnostic test.
- Basic statistical principles as applied to transplantation
- Preparation of applications for review by research ethics boards.
- Introduction to database management.
- Participation in multi-center industrial trials.
- Preparation of abstracts, manuscripts, posters and oral presentations.
- Registration and attendance support for the AST and CST annual meetings.

Transplant Research Lab (Optional)

- Introduction to laboratory research in transplantation.

4. Overview of the Kidney Transplant Program

The Kidney Transplant Program (KTP) has been in operation since 1969 and is under the Multi Organ Transplant Program.

The Kidney Transplant Program performed 3463 kidney transplants from 1969-December 2016. 1024 were from live kidney donors with 25 of these live kidney transplants through the Canadian national paired exchange program. 246 pediatric kidney transplants have been performed (146 cadaveric + 100 live). There have been 65 simultaneous kidney-pancreas transplants and 12 pancreas alone transplants. (From 2002-2007 there were 16 simultaneous kidney-pancreas transplants performed for Atlantic Canadians in Toronto and Montreal.) The program introduced Canadian Blood Services (CBS) national initiatives with Kidney Paired Donation (KPD) in 2010, Donation after Cardiac Death (DCD) donation in 2008 and Highly Sensitized Registry (HSR) in 2014.

The Queen Elizabeth II Health Sciences Center is the teaching hospital for Dalhousie University Medical School in Halifax, Nova Scotia. It is the regional referral center for transplantation; providing the only transplant service for the four provinces of Atlantic Canada: Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland, (with a combined population of 2.5 million people). Approximately 70-100 kidney transplants are performed annually. 81 kidney, liver and heart transplants were performed in 2016.

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The Kidney Transplant Team consists of 10 adult and 2 pediatric nephrologists, 3 surgeons and 1 urologist. Areas of activity include the inpatient unit, the outpatient clinic, the Renal Transplant Wait List Conference, Living Related Kidney Transplant Program (15-30/year), the Pediatric Kidney Transplant Program (3-10/year). The MOTP operates through a co-directorship arrangement: medical director (Dr. Bryce Kiberd), surgical director (Dr. Mark Walsh) and allied health director (Katherine Connell). The HLA Tissue Typing Laboratory is directed by Dr. Robert Liwski. The transplant team has a weekly renal waitlist meeting which also provides a forum for administrative, clinical, educational, research and procedural policies and issues to be discussed. The program is American Society of Transplant Surgery (ASTS) approved and the Director is Dr. Mark Walsh. Each year one or two Surgical Fellows are enrolled in the surgical training program. The Surgical and Nephrology Transplant Fellowship Programs are integrated clinically and academically and have similar objectives and goals. The Program is integrated to benefit from the expertise of all its members. The program strives for cooperation and collegiality in the spirit of a true multi-disciplinary program.

Attending staff coverage and supervision of the Transplant Unit is provided by both a Unit Surgeon and a Unit Nephrologist. The primary physician of record is rotated between the surgeon and nephrologist on a monthly basis.

In addition to the transplant Fellows, other trainees (nephrology subspecialty, urology and surgical residents) have core rotations on the Transplant service. There is also a full-time physician, Clinical Associate, under the auspices of the Medical Director (Nephrology). The Fellows supervise the daily responsibilities of all other housestaff.

Full-time nurse coordinators organize and facilitate the transplant logistics. The SmartMatch program is used to select active wait list recipients based on HLA match and time on the waiting list for cadaveric organs. The coordinators liaise with the nephrologist and surgeon on-call to determine the final selection allocation. The majority of cadaveric transplants are completed within 12-18 hours of procurement surgery. Transplant Rounds are held daily with the Unit Surgeon, Unit Nephrologist, Residents, Fellows and other support staff in attendance. Decisions regarding immunosuppression and other transplant specific issues are made with reference to policy guidelines and protocols established at the monthly Transplant meetings. Consultants in all relevant fields are readily available at all times and there is a strong hospital commitment to the Transplant Program.

Daily Transplant Rounds are conducted as mini conferences with patient presentation and discussion. There is a weekly academic session alternating between clinical and research conferences. These sessions provide the opportunity for the Fellow to present research, clinical reviews and case presentations. These presentations emphasize analysis of local program data with relevance to literature reports from other centers. These sessions also provide a venue for invited guests with national and international recognition in the field of transplantation to present.

The MOTP Information Systems Support Center maintains a database of the current transplant wait list, all transplant recipient and all cadaveric donors. This is a rich source of clinical research projects, continuous quality improvement exercises, periodic outcome analysis, and protocol development. The Pediatric Kidney Program is located at the IWK-Grace Health Center, Halifax.

Current adult standard induction immunosuppression includes Basiliximab, Tacrolimus, Mycophenolate Mofetil and steroids with maintenance with the latter three medications. The program also has extensive experience with cyclosporine, sirolimus, and antibody therapies and there is fulltime Pharm D dedicated to MOTP. Average length of stay is 7-12 days. Patients from the satellite centers are usually followed in the central clinic for an additional 1-2 weeks. They are then discharged for follow-up in the peripheral referral nephrology program. Clinical outcome data are entered into the central computer database.

5. Clinical Responsibilities of the Transplant Nephrology Fellow

Assessment of patient referred for transplantation - Patients referred from satellite centers for transplantation have their charts reviewed by a transplant nephrologist in consultation with the

Transplant Fellow. Local patients are examined and supporting documentation reviewed by the Fellow under the supervision of the transplant nephrologist. All patients are presented for discussion at weekly MOTP transplant wait list rounds and decisions made there for acceptance of candidates for listing. The waitlist meeting serves as a medical board for decision making. Other peripheral sites have the option to join the conference via teleconference for patient discussions.

Living Donor Transplants - Living related and unrelated donors from the satellite centers have their charts reviewed by the medical live donor lead nephrologist (Dr. Christine Dipchand). The medical transplant fellow would be involved with several of these reviews. Potential live donors at this center are initially examined in a nephrology clinic by the medical live donor nephrologist (or other designated nephrologist) and fellows participate in these evaluations. The medical director and two other nephrologists have a live donor committee to review charts and make decisions on eligibility for live donor acceptance.

Multi-organ Cadaveric Donor - Cadaveric donors are referred to the Multi Organ Transplant Program and logistical arrangements made by the transplant donor coordinator and retrieving surgeon. Acceptance of the donor is a joint decision by the transplant nephrologist and surgeon on call. Management of the donor is generally performed by the Transplant Surgical Fellow and the duty surgeon. The Nephrology Transplant Fellow will have an opportunity to develop practical experience.

Inpatient care - The Kidney Transplant Unit consists of 8 beds. The service has access to 4 intermediate care, monitored unit beds. The Unit is part of a larger ward shared with the nephrology and the hepatobiliary (liver transplant) surgery services. Dialysis access patients are also admitted to this ward.

The Clinical Associate assists with routine patient care. The Transplant Fellows and Associate have primary responsibility for the transplant patients. Formal rounds are held daily. This is a multi-disciplinary round with mandatory attendance by clinical fellows, associate and assigned nephrologist and surgeon. The unit physician and surgeon are also responsible to make direct patient care rounds on all patients daily. This has proven to be highly effective for patient care and education, including management of immunosuppression and medical/surgical complications including delayed graft function, drug nephrotoxicity, acute cellular rejection and infection.

Outpatient follow-up - Clinics are held three times weekly for 7-20 patients (or approximately 2000 visits annually). The patients are all reviewed and evaluated initially by the Associate or fellow and then reviewed by the staff prior to discharge from the clinic. Attendance at each clinic is mandatory. The on call Fellow also reviews blood work and patient concerns on all recent and remotely transplanted patients at the end of each day with the clinic nurses. The Fellow is also responsible for outside calls from family physicians or outside internists/nephrologists requesting medical assistance/advice. Back up is provided by the Unit physician or surgeon. Patients may require urgent assessment in the clinic, Emergency Department or be triaged for direct admission to the ward.

Immunosuppressive therapy - Therapy, for the most part, is by protocol. Induction maintenance and monitoring is the responsibility of the Fellows. Patients are either placed on standard therapy, or if entering clinical trials receive immunosuppressive treatment as per trial protocol. Experience is gained in all currently used and newer immunosuppressive agents.

On-Call-The Fellow is expected to participate in an on-call schedule with the Nephrology subspecialty residents, Surgical Transplant Fellow, surgery and Urology trainees covering the Transplant Unit.

6. Remuneration/ Vacation

The annual salary is not fixed but varies according to experience and is based on the Maritime Resident Doctors contract guidelines. CMPA insurance and provincial licensing is required and the fees are the responsibility of the fellow. Fellows with external funding will be supplemented to these levels but not above. The fellow is allocated four weeks of vacation and one week for conferences. Request for funds for registration, accommodation and travel to meetings will be considered by the Program, and favorable consideration given if the fellow is presenting on behalf of the Program. The fellow will be encouraged and supported to attend an AST annual meeting.

7. Program Management

Kidney Transplant Team Meeting

The Fellow is expected to attend weekly Kidney Transplant Program Team Meetings. These are multi-disciplinary meetings to discuss organ donor activity, wait list selections, and administrative issues, pertaining to Hospital, Clinic, Ward, candidates and waitlisted patients.

Controversial cases are discussed at length and the statuses of the patients who are temporarily removed from the kidney wait list or are reactivated from the on hold category are also discussed. This provides ample opportunity to be exposed to and discuss the evaluation and resolution of problems that may preclude transplantation or may require further pre-transplant evaluation or treatment prior to activation.

Research Meetings

Monthly meetings are held to discuss in house protocols and protocol changes as well as to review and to discuss the scientific merit of new industry sponsored multi-center trials. Updates on in progress clinical trials are also given at this time.

Organ Donor Promotion

Training in this area occurs through liaison with the Transplant Manager and the Organ Donor Coordinator.

Transplant Atlantic

Transplant Atlantic is an annual educational conference held annually in the fall. It is an

opportunity for the Atlantic satellite nephrologists and internists caring for kidney and extra-renal organ recipients to update their knowledge, discuss patient care and administrative policies and to be informed about clinical trials being conducted or evaluated. There is a business meeting that reviews the wait list, patient selection, outcomes, and amendments to the allocation process. There is also a scientific program that includes basic and clinical research presentations from local and satellite members on transplant related topics. Internationally recognized visiting speakers present two or three lectures, one of which is often a State-of-Art presentation. All topics are related to transplantation and theme based.

Data Management Meetings

These are periodic and involve issues of data quality, changes in collection events and procedures etc. A Computer Programmer is available to assist in discussing and implementing change to the database.

8a. Weekly Schedule TRANSPLANT NEPHROLOGY Fellowship
TRANSPLANT ROTATION

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:00 -9:00	Ward Rounds	Grand Rounds Medicine (weekly)	Ward Rounds	Nephrology Academic Session (weekly)	Academic Transplant (weekly)
9:00		Ward Rounds		Ward Rounds	Ward Rounds
9:30-12:00	Transplant Clinic		Transplant Clinic		Transplant Clinic
12:00 - 1:00	*11:00 – 12:00 Nephrology Biopsy Conference (monthly)	Nephrology Interesting Case Presentation (weekly)		Transplant Biopsy/HLA Rounds (monthly)	
2:00					
3:00					Ward Rounds
4:00	Ward Rounds	Ward Rounds	Ward Rounds	Transplant Academic Rounds (weekly: Journal Club, Grand Rounds, Interesting Case Presentations)	
4:00 - 5:00					

8b. Weekly Schedule TRANSPLANT NEPHROLOGY
Fellowship Mandatory Clinics and Academic Sessions

- Other time allotted to rotation specific requirements (Ward/HLA/Pathology/Research)

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:00 -9:00		Grand Rounds Medicine (weekly)		Nephrology Academic Session (weekly)	Academic Transplant (weekly)
9:30- 12:00	Transplant Clinic		Transplant Clinic		Transplant Clinic
12:00 - 1:00	*11:00 – 12:00 Nephrology Biopsy Conference (monthly)	Nephrology Interesting Case Presentation (weekly)		Transplant Biopsy/HLA Rounds (monthly)	
2:00					
3:00					
4:00 - 5:00				Transplant Academic Rounds (weekly: Journal Club, Grand Rounds, Interesting Case Presentations)	

9. Education Resources

Tissue Typing

Coordinator - Dr. Robert Liwski

Medical Director, HLA Tissue Typing Laboratory

The Transplant Fellow will complete a minimum 2 week rotation in the Tissue Typing Laboratory. The Transplant Fellow will become familiar with the methodology, utility and reliability of tissue typing, and cross match technology.

Training and the Interpretation of Transplant Biopsies

Coordinator - Dr. Laurette Geldenhuys

Department Head, Pathology

There is a monthly clinicopathological conference. The Fellow presents the clinical history of problem patients and their biopsy findings. The Fellow gains experience with the interpretation of the transplant biopsies. A general discussion of the case is conducted by the Fellow.

Morbidity and Mortality Coordinator - Dr. Bryce Kiberd

Medical Lead, Multi Organ Transplant Program

Morbidity and Mortality issues are discussed weekly at the team meeting Friday mornings. Rounds every two months to review and discuss all medical and surgical complications are prepared and presented by the Clinical Associate and Fellows.

Research Methodology

Coordinator - Dr. Karthik Tennankore

The Fellow is encouraged to participate in a research design course, in conjunction with Nephrology trainees. This is a self directed program using the Royal College Research Guide to learn the basics of literature searching, study design, data management and statistical approaches with a goal to conduct an independent scholarly project.

Research Trials

Director, Dr. Christopher Daley

The Transplant Fellow participates in the evaluation of industry sponsored multi-center trials, the preparation of these trials for submission to the Ethics Committee and the preparation of the consent forms. They also participate in evaluation of patients in clinical trials.

Journal Club

Coordinators - Dr. Tammy Keough-Ryan and Dr. Mark Walsh

Monthly Journal Club in kidney transplantation and selected nephrology topics are chosen. The fellows and residents are expected to present a critical review of the article.

Nephrology Seminar Series and Case Presentations

Coordinators- Dr. Tammy Keough-Ryan (Transplant) and Dr. Neil Finkle (Nephrology)

There are weekly seminars (Thursday 8-9) and weekly nephrology and transplant case presentations presented by nephrologists and Nephrology Fellows. Transplant Fellows will have time available and are welcomed to attend.

One on One Academic Teaching

There will be sessions to review essential topics listed above under learning requirements as required. These will be jointly prepared by fellow and attending staff for discussion of key issues on rotations.

10. Research Training in the Program

The Transplant Fellow is encouraged to perform reviews using the computerized database that contains data on almost 3000 kidney transplants since the inception of the Program. This has been a rich source of reports, abstracts and papers for presentation at local, national and international transplant meetings.

The Transplant Fellow has the opportunity to write and participate in the implementation of protocols for prospective trials. The Transplant Fellow is allotted time from clinical duties to participate in clinical reviews, prospective trials and laboratory research. The candidate may consider a degree in Clinical Epidemiology at Dalhousie or at least consider course work at the Faculty in statistics. Alternate research or epidemiology training can be considered

The Transplant Fellow is encouraged to consider clinical research (Dr.Bryce Kiberd, Dr.Karthik Tennakore) or laboratory research (Dr.Rob Liwski) through discussions with the listed leaders in these areas.

11. Human Resources

Nephrologists

Name	Department	Title
Dr. Bryce Kiberd	Division Of Nephrology	Co-Director, Medical, MultiOrgan Transplant Program, Clinical Research Leader, Transplant Nephrologist
Dr. Christine Dipchand	Division Of Nephrology	Medical Director, Live Kidney Donor Program General Nephrologist
Dr. Neil Finkle	Division Of Nephrology	Dalhousie University Adult Director, Nephrology Royal College Program General Nephrologist
Dr. Tammy Keough-Ryan	Division Of Nephrology	Medical Director, Kidney Transplant and Pancreas Program Director, MOTP Renal Transplant AST Fellowship Program, Transplant Nephrologist
Dr. Romauld Panek	Division Of Nephrology	Director, Medical Wait List Transplant Nephrologist
Dr. Penelope Poyah	Division Of Nephrology	General Nephrologist
Dr. Karthik Tennankore	Division Of Nephrology	General Nephrologist
Dr. Kenneth West	Division Of Nephrology	Division Head, Nephrology Transplant Nephrologist
Dr. Michael West	Division Of Nephrology	General Nephrologist
Dr. Phil Acott	I.W.K Hospital	Pediatric Nephrologist
Dr. James Tee	I.W. K Hospital	Pediatric Nephrologist

Clinical Pharmacist

Name	Department	Title
Dr. Christopher Daley	Multi-Organ Transplant Program	Pharm D, Clinical Pharmacy Coordinator, MultiOrgan Transplant Program

Surgeons

Name	Department	Title
Dr. Mark Walsh	Surgery	MultiOrgan Transplant Surgeon Co-Director, Surgical, MultiOrgan Transplant Program Surgical Transplant Fellowship ASATS Program
Dr. Scott Livingstone	Surgery	Multiorgan Transplant Surgeon Surgical Director, Pancreas Transplant Program Surgical Director, Liver Transplantation
Dr. Boris Gala-Lopez	Surgery	Multiorgan Transplant Surgeon
Dr. Joseph G. Lawen	Urology	Surgical Director, Kidney

Pathologists

Name	Department	Title
Dr. Robert Liwski	Pathology	Director, HLA Tissue Typing Hematopathologist, PhD
Dr. Laurette Geldenhuys	Pathology	Head, Department of Pathology General Pathologist

Surgical Transplant Fellows

Name	Department	Title
Dr. Ahmed Afandi	Multi-Organ Transplant Program	Surgical Transplant Fellow
Dr. Stephanie Hiebert	Multi-Organ Transplant Program	Surgical Transplant Fellow

Clinical Associate

Name	Department	Title
Dr.Himanthi Da Silva	Division Of Nephrology	Clinical Associate in Transplantation

Transplant Administration and Information Technology

Name	Department	Title
Ms. Katherine Connell	Multi-Organ Transplant Program	Co-Director, Allied Health, MultiOrgan Transplant Program, Health Services Manager
Ms. Heather Travis	Multi-Organ Transplant Program	Live Kidney Donation Transplant Coordinator
Ms. Janice Boudreault	Multi-Organ Transplant Program	Kidney Recipient Transplant Coordinator
Ms. Lisa Chisholm	Multi-Organ Transplant Program	Kidney Recipient Transplant Coordinator
Ms. Brittany Chaisson	Multi-Organ Transplant Program	Kidney and Kidney-Pancreas Recipient Transplant Coordinator
Mr. Scott Boucher	Multi-Organ Transplant Program	System Analyst, Information Technology Support
Mr. Jude Abbey	Multi-Organ Transplant Program	System Analyst, Information Technology Support
Mr. Amal Abdel Magid	Multi-Organ Transplant Program	Quality Lead

Clinical Trials

Name	Department	Title
Ms. Laura Sills	Multi Organ Transplant Program	Nurse Lead Coordinator Clinical Trials
Ms. Elizabeth Larsen	Multi Organ Transplant Program	Nurse Coordinator Clinical Trials

12. Facilities

Inpatient Transplant Unit - Ward 6B – The transplant beds on this unit are mixed with nephrology and hepatobiliary surgery. There is a 4 bed intermediate care unit with monitored beds. The nurses on the ward are experienced in kidney transplantation, as well as in nephrology and dialysis.

10A O.R. - This is the kidney transplantation O.R. Suite.

Kidney Transplant Clinic - 4th Floor – Dickson Building

Clinics are held on a three times weekly (MWF) basis with approximately 7 - 20 patients booked and assessed initially by the house staff. The majority of the clinics are run by a nephrologist. One urologist runs the clinic on the average every two months. Surgeons provide consult service when necessary to the clinic. Patients may be booked in to surgical clinics if clinical situation demands.

Dialysis Unit - 6th Floor - Dickson Building

This unit provides for 250 chronic hemodialysis patients. The home dialysis unit presently follows peritoneal dialysis patients and satellite and home hemodialysis patients.

Pediatric Inpatient - Ward 6 North - IWK-Grace Health Science Center

This is home to the Pediatric Nephrology and the Pediatric Kidney Transplant Service with 3-10 transplants performed annually. Patients at the IWK are under the medical care of the nephrology staff. The designated Pediatric Transplant Surgeons and Fellow are in frequent communication and examine patients and recommend therapy as is needed.

Pediatric Clinic

This clinic is held adjacent to the Dialysis Unit at the IWK-Grace Health Science Center. Approximately 5-10 patients are seen on a weekly basis.

Information Technology Support, MultiOrgan Transplant Program -9th Floor Centennial Building

The computer database has information on approximately 3000 kidney transplant patients. This is kept current by two data entry personnel and is overseen by a computer programmer who participates in some of the data management. This computer database acts as a starting point for many clinical reviews and period transplant laboratories.

Transplant Coordinators-6th Floor Centennial Building-VG site

The kidney donor transplant coordinators (live donor and cadaveric donor) have offices adjacent to the in hospital ward on 6S. All pre-transplant data is filed in their office.

Library

The Fellow will be recognized by Dalhousie University and have all the privileges of this association, including access to the library, athletic facilities etc. In addition to the University the division and hospital have small libraries and subscribe to transplantation and related journals.

Fellow Office -6th Floor Centennial Building

The Fellows share an office located close to the 6B ward. This office on 6S includes computers with Internet access. The Medical Renal Transplant Fellow also has dedicated office space on the 5th floor of the Dickson Building within the Nephrology Division.

13. Satellite Nephrology/Dialysis Centers in Atlantic Canada

New Brunswick

Bathurst, New Brunswick

Nephrologists: Dr. Dean Hickey, Dr. Sylvie Robichaud

Moncton, New Brunswick

Nephrologists: Dr. Julian D'Astous, Dr. Yves Thibeault, Dr Mark Dorval, Dr. Kathy Ferguson, Dr. Sylvie Roux

Saint John, New Brunswick

Nephrologists: Dr. Nessa Gogan, Dr. Martin McKinnon, Dr. Christine Pippy, Dr. Paul Sohi.

Newfoundland

Corner Brook, Newfoundland

Nephrologists: Dr. Krista Fudge, Dr. Stephen Murphy,

St. John's, Newfoundland

Nephrologists: Dr. Brendan Barrett, Dr. Bryan Curtis, Dr Maureen Hannaford, Dr. Sean Martin,

Dr. Sean Murphy , Dr. Patrick Parfrey, Dr. Michael Paul, Dr. Pamela Pike, Dr. John Shik

Nova Scotia

Sydney, Nova Scotia

Nephrologists: Dr. Tom Hewlett, Dr. Siva Thanamayaoran, Dr. Gordon Yeung.

Prince Edward Island

Charlottetown, Prince Edward Island

Nephrologists: Dr. Derek Chaudhary, Dr. Bruce Jones

Appendix:

AST/ASN Renal Transplant Fellowship Accreditation Program Transplant Fellowship Topics

- I. Transplant Immunology
 - a. Normal immune response
 - b. Response to allografts
 - c. Tolerance
 - d. Crossmatches, flow cytometry
 - e. Identification of anti-HLA antibodies/donor specific antibodies

- II. Pharmacology/Immunosuppression
 - a. Available agents
 - b. Review mechanisms of the agents
 - c. Current pharmacotherapy
 - d. Investigational agents
 - e. Therapeutic drug monitoring of immunosuppressive therapies
 - f. Steroid avoidance and withdrawal
 - g. CNI elimination/minimization and withdrawal
 - h. Drug-drug interactions
 - i. Drug side effects
 - j. Review of the major trials in transplantation

- III. Medical Complications of Transplantation
 - a. Infections: Bacterial and viral (including: CMV, BK, EBV (see malignancy for PTLT), Parvovirus)
 - b. Hypertension
 - c. Atherosclerosis
 - d. Hyperlipidemia
 - e. Transplant-associated hyperglycemia
 - f. Transplant associated malignancy
Viral driven malignancy (PTLD, cervical CA, Kaposi's sarcoma, nasopharyngeal CA)
Non-virally driven malignancy (renal cell, skin)
 - g. Hepatobiliary disease/HCV
 - h. Musculoskeletal and bone/mineral metabolism
 - i. Posttransplant erythrocytosis
 - j. Metabolic syndrome

- IV. Organ Allocation
- V. Pretransplant Evaluation of the Recipient
- VI. Pretransplant Evaluation of the Living Donor
- VII. Graft Dysfunction
 - a. Rejection
 - b. Mechanical complications
 - c. Infection
 - d. Nephrotoxicity
 - e. Recurrent disease
 - f. *De novo* disease
 - g. Renal artery stenosis
- VIII. Expected Outcomes/Risk Factors
 - a. Live donation: related and unrelated
 - b. Deceased donor Organs
 - SCD< ECD, DCD, Pediatric en bloc
 - d. Race
 - e. HLA matching
 - f. Original disease
- IX. Special issues in pediatric renal transplantation
- X. Pregnancy and contraception
- XI. Ethics
- XII. Pancreas and simultaneous kidney/pancreas transplantation
- XIII. Kidney transplantation in other solid organ transplant recipients (both after other organs, and the combined kidney/"other" organ)
- XIV. Transplantation of ABO-incompatible and cross-match incompatible individuals
- XV. Paired kidney exchange programs

Transplant Pathology Series

- I. Review of Banff criteria
- II. Acute and chronic rejection, subclinical rejection
- III. Calcineurin inhibitor toxicity
- IV. Recurrent Disease
- V. C4d staining
- VI. BK nephropathy
- VII. Thrombotic microangiopathy
- VIII. Clinical management of pathologic findings
- IX. Protocol transplant biopsies

Other Academic Training Education:

Trainees are expected to participate in Timely Topics in Transplantation Webinar series, CST Webinars, CST Research Fellows in Training Symposium (Research FITS), University of Toronto Transplant Immunology Course and Transplant Nephrology Core Curriculum.