

Anesthesia and Perioperative Medicine
Western University

Transplant Anesthesia
Program Director – Dr. Achal Dhira



Please visit the Transplant Anesthesia Fellowship site for most up-to-date information:

http://www.schulich.uwo.ca/anesthesia/education/fellowship/fellowships_offered/transplant_anesthesia.html

Clinical Fellowship – Transplant Anesthesia

PREAMBLE

The Fellowship in Liver Transplant anesthesia through the Department of Anesthesiology and Perioperative Medicine at Western University is designed to equip the clinician with the necessary skills to provide safe anesthetic for any type of liver transplant or other liver related procedures. Since the liver transplant takes many hours, is clinically and physically demanding, the fellowship is heavily focused on clinical training. As new techniques and procedures emerge, teaching and research also become integral components of this fellowship. Fellows of this specialty are expected to be the leaders and be able to start liver transplant program and continue ongoing development in this field. We are committed to providing the highest quality experience and education for each of our fellows. **The fellowship is based on Royal College of Physicians and Surgeons of Canada's CanMeds roles.**

Transplant History at LHSC:

- First liver transplant in Ontario, 1977
- First pediatric liver transplant in Ontario: 1984
- World's first successful Liver-Bowel transplant: 1988
- Canada's first pediatric Liver-Bowel transplant: 1993
- Canada's first parent-to-child living donor transplant: 1993
- World's youngest multi-organ transplant recipient: 1997
- Canada's first adult-to-adult living donor liver transplant: 2000
- Canada's first DCD liver donor: 2006
- Longest surviving liver transplant recipient in Canada

STRUCTURE OF THE FELLOWSHIP

- **Duration:** the fellowship training program will be undertaken over twelve consecutive months and includes four weeks of vacation time.
- **Number of fellowship positions:** 2
- **Location:** Fellowship training will take place at University Hospital.
- **Service commitment:** 100 days per year (subject to change according to department fellowship policies). This service commitment may be in subspecialties unrelated to transplant anesthesia. The remainder of the weekdays is subspecialty time. Fellows spend approximately three days per week in cardiac anesthesia clinical activities. Academic time may be granted depending on the academic productivity of the fellow.
- **Call commitment:** Organ transplants are unpredictable, mostly occurring during odd hours and on weekends. Given the limited number of transplants, it is important that at least one fellow be present in every case (for proper experience and training). It is expected that there will be one fellow on call every day. Conventionally, the fellows do one week of on call with the same consultant at a time on alternate weeks. If the liver transplant goes past mid-night, the fellow is not expected to report for duties the following day (unless there is another transplant). Every effort is made to provide proper rest to the on call liver team if there are multiple back-to-back transplants.
- **Fellowship eligibility:**
 - Candidates must possess a medical degree from a recognized University equivalent and have passed anesthesia specialty specific exams.
 - International Medical Graduates must be approved by the PGE Office at Western University
 - English Language Requirement: TOEFL-iBT required, achieving an overall score of no less than 100 with a minimum score of 24 in speaking or listening (**IMG only**).
 - All non-Canadian trained anesthesiologists will be required to pass an assessment period taking place over the first 4 - 8 weeks in order to continue with the fellowship ('PEAP' – Pre-entry assessment period).
- ✓ **Link to Application Requirements:**
www.schulich.uwo.ca/anesthesia/education/fellowship/application_requirements.html

GOALS AND EDUCATIONAL OBJECTIVES OF THE FELLOWSHIP

CLINICAL

- Duration of the liver transplant fellowship program will be of minimum one year (with the possibility of a two year enrolment). One year should provide an opportunity to be exposed to at least 20 - 30 orthotopic liver transplantation (OLT) procedures. During this period, it is expected that the fellow be exposed to the following different clinical scenarios:
 - OLT for Fulminant hepatic failure
 - Re-transplantation
 - Transplantation in patients with renal failure on renal replacement therapy
 - OLT without the use of blood transfusion
 - Use of good and marginal donor (extended criteria donor) organs
 - Living related liver transplantation – both donor and recipient management
 - Combined transplantation
- Fellows are expected to differentiate between different surgical techniques viz. conventional cross clamping, piggy-back technique, use of porto-caval shunts and veno-venous bypass and impact of these techniques on hemodynamics and anesthetic management.
- By the end of the fellowship, fellow is expected to conduct smooth anesthesia for orthotopic liver transplantation with minimal supervision. They are also expected to make evidence based decisions regarding use of intraoperative fluids, blood products and, hemodynamic monitors (Flow trac, TEE, Swan Ganz etc).
- Fellows will be exposed to major hepato-biliary resections including ALPPS procedures & TIPS procedures. Fellows are also expected to be involved with the preoperative assessment and optimization of patients before OLT
- In the near future, fellows will be undergoing two or three simulation sessions

TEACHING

- Fellows, with the support of faculty are expected to present interesting cases and journal articles during monthly PBLDs.
- Following topics will be discussed by faculty members during fellows' specialty days either as one on one sessions or as didactic lectures:
 - Pre operative assessment of End stage liver disease (ESLD)
 - Chronic Liver Disease
 - Overview of OLT and Liver Resection
 - Coagulopathy of liver disease
 - Reperfusion Syndrome
 - Renal issues in ESLD

- Cardiovascular problems in ESLD
 - Pulmonary complication of ESLD
 - Fulminant hepatic failure
 - Post liver transplant anesthesia
 - Non transplant surgery in a patient with liver disease
 - Other topics of discussion include role of TEE, Blood management
 - Choice of fluids and risk stratification
- Depending upon availability, efforts will be made to involve transplant coordinators and surgical fellows to discuss the following:
 - Regional & nationwide system of allocation of donor organs
 - Different preservative solutions and their impact
 - Surgical techniques for OLT, ALPPS and liver resection procedures
 - Misc. relevant topics
 - Fellows are expected to attend the following combined hepatology & surgical rounds:
 - Mortality and morbidity (Quality assurance) rounds
 - Liver transplant assessment rounds
 - Liver transplant Grand rounds

RESEARCH

- Fellows are expected to be involved with at least one on-going research project and initiate the process for another one.
- They will also be expected and encouraged to present interesting case reports, abstracts in annual meetings of relevant Canadian and international societies.
- Liver transplant fellows are encouraged to participate in writing manuscripts, book chapters, development of curricula and contribute articles / teaching material for the websites (transplant & departmental).

MENTORING

- Fellows will be under direct supervision of, and mentored by the director of the program (Dr. Achal Dhir). Fellows will be guided and supported by sub-specialty coordinators - Dr. Steve Morrison for teaching and Dr. Ramiro Arellano for research. Every effort will be made to facilitate individual training requirements.

EVALUATION PROCESS

- Fellows will be evaluated on an ongoing basis based on their clinical management skills, after the fellow clears PEAP. Reports will be solicited from all staff members actively working with the Fellow. There will also be informal meetings to discuss fellowship objectives, any special needs and projects etc. In addition, a formal written evaluation will be undertaken after each four-month period during the Fellowship. The results of this evaluation will be discussed in person with the Fellow and appropriate actions taken to ensure educational objectives are met.
- The fellows' presentations will be evaluated according to the Royal College of Physicians and Surgeons of Canada's assessment process
- Fellows are expected to keep a log book of the types of liver related procedures they have been involved