

LU-FMS Residency program

Length of training years of each specialty position at LU medical school.

Specialty	Length of Training*	Total number of years	Name of Training Years
Anaesthesia and Intensive Care	4 years	4	PGY-1, PGY-2, PGY-3, PGY-4
Emergency Medicine	4 years (it was 2 years after 3 years Internal Medicine)	4 or 5	PGY-1, PGY-2, PGY-3, PGY-4
Family Medicine	3 years	3	PGY-1, PGY-2, PGY-3
Forensic Medicine	4 years	4	PGY-1, PGY-2, PGY-3, PGY-4
Histopathology/ Pathological Anatomy	5 years	5	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5
Internal Medicine	3 years	3	PGY-1, PGY-2, PGY-3
Laboratory Medicine	4 years	4	PGY-1, PGY-2, PGY-3, PGY-4
Obstetrics/Gynecology	5 years	5	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5
Pediatrics	4 years	4	PGY-1, PGY-2, PGY-3, PGY-4
Psychiatry	4 years	4	PGY-1, PGY-2, PGY-3, PGY-4
Radiology	5 years	5	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5
General Surgery	5 years	5	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5
Neurosurgery	6 years (1 st year common core in surgery)	6	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5, PGY-6
Ophthalmology	5 years	5	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5
Orthopedic Surgery	5 years (1 st year common core in surgery)	5	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5
Oto-Rhino-Laryngology	5 years (1 st year common core in surgery)	5	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5
Pediatric Surgery	5 years	5	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5
Plastic and Reconstructive Surgery	5 years (1 st year common core in surgery)	5	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5
Urology	5 years (1 st year common core in surgery)	5	PGY-1, PGY-2, PGY-3, PGY-4, PGY-5

*Minimum number of years of postgraduate training for eligibility for board certification

Length of training years of each subspecialty position at LU medical school.

Sub-specialty	Length of Training*	Total number of years	Name of Training Years
Cardiology	3 years after 3 years Internal Medicine	6	F1, F2, F3
Clinical Immunology	2 years after 3 years Internal Medicine	5	F1, F2
Dermatology	3 years plus PGY-1 Internal Medicine	4	F1, F2, F3
Endocrinology	2 years after 3 years Internal Medicine	5	F1, F2
Gastroenterology	2 years after 3 years Internal Medicine	5	F1, F2
Medical Reanimation	1 year after 5 years Pneumology or 2 years after 3 years Internal Medicine	6	F1 or F1, F2
Infectious Diseases	2 years after 3 years Internal Medicine	5	F1, F2
Nephrology	2 years after 3 years Internal Medicine	5	F1, F2
Neurology	3 or 4 years plus PGY-1 Internal Medicine	4 or 5	F1, F2, F3 or F1, F2, F3, F4
Haematology-Oncology	2 or 3 years after 3 years Internal Medicine	6	F1, F2 or F1, F2, F3
Pneumology	2 or 3 years after 3 years Internal Medicine	5 or 6	F1, F2 or F1, F2, F3
Rheumatology	2 years after 3 years Internal Medicine	5	F1, F2
Geriatric	2 years after 3 years Internal Medicine	5	F1, F2
Endocrino-reproduction & Infertility	2 years after 5 years Obstetrics/Gynecology	7	F1, F2
Neonatology	2 years after 4 years Pediatrics	6	F1, F2
Paediatric Haemato-Oncology	3 years after 4 years Pediatrics	7	F1, F2, F3
Cardio-Thoracic Surgery	4 years after 3 years General Surgery	7	F1, F2, F3, F4
Vascular Surgery	3 years after 3 years General Surgery	6	F1, F2, F3

*Minimum number of years of postgraduate training for eligibility for board certification

Clinical Training and Evaluation at LU-FMS for Residents

The LU-FMS provide residents adequate clinical experience in the appropriate training hospitals through the following methods:

- Each head of department at the LU-FMS determine the hospitals in which residents and fellows must rotate during the years of specialties. The rotation duration is 6 months. The aim is to expose the resident to a variety of hospital settings and benefit the most from the expertise of attending specialists in these hospitals. This is well predetermined particularly for the advanced specialties and subspecialties such as vascular, neurosurgery, fertility, interventional radiology, etc.
- Each head of department maintains an updated core curriculum for his department/specialty. The curriculum details the objectives of the specialty course, the intended learning outcomes, the teaching methodologies, the topics expected to be covered and studied.
- Each department receive at the end of each rotation formal evaluations of residents. These evaluations are filled by the program director and/or the head of division in the hospital where the resident rotate. The evaluation encloses grading the medical knowledge, basic and clinical, clinical skills, professionalism, communication skills, integrity and system-based learning of the resident. The evaluation score obtained is integrated in the final grade that allow the resident to pass to the next year.

Clinical Training Requirements for Specialty Residency Programs at LU-FMS

In an internal medicine residency program, the obligatory cases to be studied per year may include:

- First year: Common medical conditions such as diabetes, hypertension, asthma, COPD, pneumonia, urinary tract infections, and skin infections.
- Second year: More complex medical conditions such as heart failure, liver disease, kidney disease, anemia, and malignancies.
- Third year: Complex medical conditions such as stroke, neurological disorders, rheumatologic diseases, endocrine disorders, and infectious diseases.

In a surgical residency program, the obligatory cases to be studied per year may include different procedures and surgeries that residents must become proficient in. The specific number and type of cases can vary depending on the surgical specialty and residency program requirements.

For example:

1. Concerning the Cardio-thoracic surgery residents, residents should have the first three years of regular training in the general surgery department, having the same duties and exams as others. They become fellows starting from PGY IV.

- During the PGY IV: they should do regular rounds on a daily basis on cardio-thoracic surgery patients and learn how to surgically follow them up. In the operating room, they start to harvest vascular grafts such as the internal mammary arteries and the greater saphenous veins, beside the surgical opening and dissection and final surgical closure. They also start doing thoracoscopic procedures.
- During the PGY V, they start installing and removing the Cardio-pulmonary bypass machines, and perform simple coronary and valvular procedures. They also start doing pulmonary lobectomies.
- They should train abroad during the PGY VI and PGY VII in a renowned university hospital. In Lebanon, they should train in University hospitals that have a load of more than 150 cardiac procedures a year.

2. The Urology residency program which is currently a five - year program with progressively increasing levels of responsibility each year. The five year program consists of 1 year of General Surgery, followed by four years of urology. The residents in the Urology department will rotate in at least 5 major academic or university hospitals affiliated with the LU-FMS. The distribution and rotation in these facilities depend on the type, quality, and number of surgeries performed in each center. This issue will depend mainly on the expertise of the urologists in each hospital.

In an Urology residency program, the obligatory cases to be studied per year may include:

- PGY I: Spend 12 months in the Surgery department and rotate in different specialties vascular, general surgery, orthopedics, and pediatric surgery including urology.
- PGY II : Develop Urologic Surgical Skills including demonstration of understanding of anatomy, indications and risks, familiarity with instrumentation, speed, and lack of complications for the following: Perform stent placement (also demonstrate knowledge of

fluoroscopic equipment, appropriate stent placement, appropriate selection of guidewire type and stent diameter and length) (Number of procedures at least, n=10); Retrograde pyelograms (n=10-15); Perform transurethral bladder biopsy (also demonstrate appropriate choice of irrigating fluid, location and depth of biopsies, appreciation of bladder over-distention, appropriate use of electrocautery) (n=20); Perform transrectal needle biopsy of the prostate (also demonstrate correct interpretation of images and appropriate location and number of biopsies) (n=20); Opening and closing scrotal incision (n=10); Orchiopexy for torsion (n= 5- 10); Intracorporal injection (n=20); Suprapubic tube placement (n=15); Rigid cystoscopy (n=20); Flexible cystoscopy (n=20); Stent removal (n=10-15); Simple and radical orchiectomy (n=10-15); Adult hydrocele repair (n=10-15); Varicocelectomy (n=10-15); Spermatocelectomy (n=10-15); Circumcision (n=10-15); Dorsal slit (n=10); Excision of genital skin lesions (n=10-15); Urethral dilation (n=20-25); Shock wave lithotripsy (n=20-25).

- PGY III: Develop Urologic Surgical Skills including demonstration of understanding of anatomy, indications and risks, familiarity with instrumentation, speed, and lack of complications for the following (in addition to skills listed under previous residency years): Opening and closing flank incision (n=10); Opening and closing chevron or hockey-stick incision (n=10); Incision of urethral stricture (n=15-20); Transurethral incision of the prostate (n=15); Transurethral resection of the prostate (n=20); Transurethral resection of papillary bladder tumor (n=15-20); Simple prostatectomy (n=10); Cystolitholapaxy (n=5-10); Ureteroscopy for stone (n=20); Holmium laser use (n=20); Ureteroscopy for upper tract tumor (n=5); Pelvic lymph node dissection (n=10-15); Assist on urologic procedures on high risk patients (n=10-15).
- PGY IV: Develop urologic surgical skills including demonstration of understanding of anatomy, indications and risks, familiarity with instrumentation, speed, and lack of complications for the following (in addition to skills listed under previous residency years): Simple nephrectomy (n=10); Radical nephrectomy (n=10-15); Laparoscopic nephrectomy (n=15-20); Pyeloplasty (n=10); PCNL (n=10-15); Transurethral resection of large bladder tumor (n=20-25); Correction of Peyronie's with plication (n=5-10); Urethrectomy (n=5); Partial cystectomy/diverticulectomy (n=5); Repair of bladder injury/rupture (n=5); Female pelvic reconstruction (n=5-10); Bladder neck suspension (n=5); Cystocele repair (n=5-10); Sling procedure (n=10); Ureteral reimplantation for reflux (n=10); Orchiopexy for cryptorchidism with abdominal testis (n=15); Distal hypospadias repair (n=10).

- PGY V: Procedures that must be learned: Adrenalectomy (n=5-10); Radical prostatectomy (n=10-15); Cystoprostatectomy and conduit/continent diversion/bladder substitution (n=5-10); Female cystectomy/anterior exenteration with conduit (n=5-10); Bladder augmentation, Mitrofanoff, Monti (n=5-10); Partial nephrectomy (n=5-10); Segmental ureterectomy (n=5-10); Repair of vesico-enteric fistula (n=5); Retroperitoneal lymph node dissection (n=5); Sentinel/inguinal lymph node dissection (n=3-5); Correction of Peyronie's with plaque excision and grafting (n=5-10); Total penectomy with urethrostomy (n=5-10).

Urology staff at LU's affiliated hospitals are committed to help residents learn the art and science of urology. They promise to stimulate their thinking and learning while also providing timely feedback and direction to ensure that they progress satisfactorily. They expect residents to strive for excellence in everything they do, to provide the best possible patient care, and to reach their full potential as a urology student.

3. Concerning the Otorhinolaryngology Head and Neck Surgery residency program, it is offered as a five-year training program at LU-FMS. At the completion of this program, graduates are expected to be proficient in the care of patients of all ages with pathologies relating to the ear, nose, throat and head and neck area. The program aims to provide a well-rounded training in medical and surgical aspects of otorhinolaryngology head and neck surgery thereby providing its graduates with the tools necessary for a successful and safe practice. The duration of the training program is 60 months, divided into 5 academic years during which residents are expected to progress through more complex patient care responsibilities commensurate with their training level. Educational goals by training year are summarized below:

- PGY1: The internship year is organized to give trainees exposure to all the basic principles of surgery and patient care that will be relevant to their training and practice. Residents spend 6 months in rotation with general surgery, and another 6 months distributed among the following specialties: Emergency, Intensive Care, Trauma, Plastic Surgery, Neurosurgery, Anesthesia
- PGY2: Students must acquire: Basic anatomy of the head and neck area; Comprehensive otorhinolaryngology physical exam; Familiarity with interpretation of audiograms; Skills necessary for flexible fiberoptic naso-pharyngeal endoscopy; Ability to recognize and provide the immediate care for airway emergency cases; Care for non-complicated cases of epistaxis; Skills for wound care for simple wounds of the head and neck; Acquire the

surgical skills necessary for the following procedures (Tonsillectomy, Adenoidectomy, Myringotomy and tube placement, Frenuloplasty, Incision and drainage of abscesses).

- PGY3: Students must acquire: Mastering the detailed anatomy of the ear, nose and head and neck area; Ability to read and interpret imaging studies of the head and neck and recognize normal structures and gross abnormal pathology; Ability to identify and direct care for patients with airway emergencies; Acquire the surgical skills necessary for the following procedures (Turbinate reduction surgery, Correction of septal deviation, Myringoplasty, Tracheostomy, Closed reduction of nasal fractures, Suspension microlaryngoscopy, Esophagoscopy, Diagnostic bronchoscopy).
- PGY4: Students must acquire: Ability to establish a provisional diagnosis and a plan of care for the majority of patients seen in clinic; Efficient time-management in clinic; Proficiency in reading and interpreting imaging studies of the head and neck with a good understanding of the differential diagnosis of the common pathologies seen on such tests; Acquire the surgical skills necessary for the following procedures (Repair of complex wounds of the head and neck area; Tracheotomy; Bronchoscopy with removal of foreign bodies; Esophagoscopy with removal of foreign bodies; Rhinoplasty; Facial rejuvenation procedures; Neck dissection; Parotidectomy).
- PGY5: Students must acquire: Ability to independently assess and formulate a plan of care for outpatients; Ability to provide comprehensive and timely post-operative care for inpatients; Leadership and communication skills to guide junior residents and the overall daily running of the program; Acquire the surgical skills necessary for the following procedures (Airway reconstruction procedures, Laryngectomy, Glossectomy, Tympanoplasty, Mastoidectomy, Endoscopic sinus surgery).

4. Concerning the clinical training of plastic surgery residents, the required number and categories of patients are as follows:

Trainees should demonstrate competence in the range of emergency and elective procedures with indicative numbers as follows:

- Elective competencies: Dupuytren's contracture surgery (n=24); Lymph node surgery (n=15); Free tissue transfer (n=27); Breast reconstruction (n=40); Aesthetic (performed/assisted) (n=100); Excision skin lesion (n=100); Cleft surgery (performed/assisted) (n=35)

- Emergency competencies: Zone 1-2 flexor tendon repair (n=30); Microvascular anastomosis (n=35); Burns resuscitation (n=18); Excisional burns surgery (n=60); Hand fracture fixation (n=45); Neurosynthesis (n=50); Lower limb trauma (n=50).

Trainees must achieve the indicative number of procedures in all indicative domains but may fall short of the indicative number in two domains and still be considered to have achieved adequate operative experience for certification:

- Elective competencies: Dupuytren's contracture surgery (n=15); Lymph node surgery (n=10); Free tissue transfer (n=16); Breast reconstruction (n=20); Aesthetic (performed/assisted) (n=50); Excision skin lesion (n=70); Cleft surgery (performed/assisted) (n=20).
- Emergency competencies: Zone 1-2 flexor tendon repair (n=16); Microvascular anastomosis (n=20); Burns resuscitation (n=16); Excisional burns surgery (n=30); Hand fracture fixation (n=30); Neurosynthesis (n=30); Lower limb trauma (n=25).

Per one day hospital, indicate the average number of surgical procedures that residents perform per specialty

Hospital / Specialty	Number of surgical procedures performed per residents					
	MGH	SGH	SCH	NMH	HAYAT	RHJH
Cardio-thoracic surgery	0.2	NA	4	NA	0	6
General Surgery	5	4	15	4	1	2
Head and neck surgery	0.2	NA	50	1	0	0
Plastic Surgery	0.2	NA	40	0.5	0	0
Neurosurgery	0.8	1	8	2	1	0
Ophthalmology	1	2	40	3	1	5
Orthopedics	2	4	90	2	2	0
Oto-Rhino-Laryngology	3	4	40	1	1	0
Pediatrics surgery	1	NA	10	1	1	0
Urology	2	3	60	2	3	1
Vascular surgery	2	2	40	2	1	0

MGH=Makassed General Hospital, SGH=Sahel General Hospital, SCH=Saint Charles Hospital, NMH=New Mazloun Hospital, HAYAT=AL Hayat Hospital