

Facial Plastic and Reconstructive Surgery/Rhinology and Sinus Surgery/Otology and Neurotology/General Otolaryngology (GOLD) Rotation

This rotation provides a comprehensive, mentored exposure to the care of patients in facial plastic and reconstructive surgery, rhinology and sinus surgery, otology/neurotology, and general otolaryngology, encompassing allergy and sleep medicine. The nine attendings on these services are members of the faculty of the Division of Otolaryngology. Residents rotate on the GOLD service twice for four months each during the R3 and R5 years. Other training in these areas has been as part of mixed-service rotations at the VAMC and PCMC during the R2/4 years. Training occurs primarily at University Hospital and outpatient clinics, Utah Surgical Center, LDS Hospital, IHC Intermountain Medical Center, and the IHC Hearing and Balance Center.

Didactic teaching on GOLD is informal and structured around patients' outpatient and surgical visits and floor consults. Efforts will focus on the ability to understand the pathophysiology and scientific evidence to support good judgment in the diagnosis and treatment of common and rare problems in these fields. Additionally, GOLD residents are required to participate in all formal didactic sessions at the University as otherwise outlined in this Handbook, including the Temporal Bone Dissection course. Residents are expected to perform independent study in the laboratory to prepare for surgical cases—particularly for otologic/neurotologic operations.

Goals and Objectives

The GOLD rotation is run in accordance with the core competencies for otolaryngology residency program requirements. Residents are also expected to meet the general otolaryngology program goals and objectives for their training level.

The R3 resident will meet develop competency in the following areas by meeting these objectives:

Patient Care:

1. Develop intermediate levels of competence in outpatient, inpatient, consultation, and surgical services and procedures of the specialties on the GOLD service.
2. Progress from close supervision by the attending when taking a history and performing a physical examination, determining a diagnosis, and formulating a treatment plan to being able to perform these functions with diminishing levels of oversight.
3. Develop intermediate surgical skills and progress towards performing as first assistant in major surgical cases or as primary surgeon in appropriate cases after competence has been determined by the attending.
4. Develop soft tissue technique for closure of skin and skin flaps.
5. Demonstrate basic soft tissue skills including atraumatic handling of tissues and proper selection of instruments for different soft tissue tasks.
6. Develop surgical laser cautery skills.
7. Begin exposures in trauma cases.
8. Become proficient in: septoplasty, closed reduction of nasal fractures, flap design, MMF, uncinectomy, middle meatal antrostomy, anterior ethmoidectomy, and posterior ethmoidectomy, sphenoidectomy, inferior turbinate submucosal resection, mastoidectomy, tympanostomy, myringotomy, ear cartilage grafts, harvest of abdominal fat grafts, split-thickness skin grafts, tonsillectomy, adenoidectomy, UPPP, and tympanoplasty.

Medical Knowledge:

1. Become knowledgeable about disease processes in the GOLD patient populations.
2. Understand the principles of facial photography analysis.
3. Develop knowledge of needles and sutures used in facial plastic surgery.
4. Be familiar with the variety of local flaps used in facial reconstruction and the geometric principles of each flap's design.
5. Plan exposures in trauma cases.
6. Demonstrate proper identification of sinus anatomy.
7. Understand the principles of diagnosis and treatment of HHT.
8. Be proficient at reading a polysomnogram and its significance as it relates to patient care.
9. Become knowledgeable on the medical and surgical treatment of sleep apnea.
10. Understand the principles of clinical allergy testing and indications for allergy immunotherapy.
11. Develop knowledge on radiographic and surgical sinus anatomy.

Practice-Based Learning and Improvement:

1. Develop teaching and evaluation skills through working with medical students and junior residents and assessing their performance.
2. Effectively educate patients and other healthcare professionals about otolaryngic disease, treatment, and prevention.

Interpersonal and Communication Skills:

1. Develop communication skills when interacting with patients across the socioeconomic spectrum from self-pay cosmetic patients to uninsured trauma patients.
2. Gather patient data in preparation for morning rounds and learn to communicate this information effectively to the R5, attendings, consulting medical services, and allied health professionals.
3. Develop skills for effective dictation and/or transcription of clinical notes.
4. Meet all requirements for timely completion of medical records.

Professionalism:

1. Demonstrate compassion, integrity, and respect for others and for a diverse patient population.
2. Demonstrate responsiveness to patient needs that supersedes self-interest.
3. Show respect for patient privacy and autonomy.
4. Dress and groom appropriately to convey professional appearance.

Systems-Based Practice:

1. Develop competency in delivering health care in different physical settings (outpatient clinic, inpatient rooms, OR, ER)
2. Demonstrate sound decision making to deliver cost-effective and safe patient care.
3. Present cases at monthly Morbidity and Mortality conference to develop skills necessary to identify system errors and suggestions for systemic change.
4. Continue information gathering and research on the quality improvement project.

The R5 resident will meet develop competency in the following areas by meeting these objectives.

Patient Care:

1. Demonstrate mastery in the proper ordering of diagnostic and imaging modalities.
2. Independently evaluate new patients and present them to the attending with an appropriate treatment plan.
3. Demonstrate mastery of all in-office procedures and will be prepared to act as surgeon in most operations.
4. Demonstrate mastery of all flap techniques.
5. Demonstrate proficiency in: open nasal surgery; forehead flap nasal reconstruction; cosmetic and functional blepharoplasty; endoscopic treatment of posterior epistaxis; frontal sinus surgery; treatment and multiple approaches for facial fractures, stapedectomy/stapedotomy including revisions; and tympanoplasty with mastoidectomy, ossicular chain reconstruction, and/or prosthesis.

Medical Knowledge:

1. Achieve mastery of the related anatomy and physiology, disease processes, disorders, and the medical, surgical, and behavioral treatments for these patient populations.
2. Be able to discuss all appropriate medical and surgical interventions for a given patient presentation.
3. Be able to identify the pros and cons of different flap techniques, justify the choice of the appropriate technique in various cases.
4. Properly develop surgical plans for rhinoplasty with understanding of appropriate techniques in various cases.
5. Understand the work-up and decision process for treatment of facial paralysis.
6. Understand the design and execution of rhytidectomy, mid-face lifts, head and neck liposuction, and chin augmentation.
7. Be able to describe the surgical procedure for advanced cosmetic procedures including face lift, brow lift, and otoplasty.
8. Demonstrate mastery of treatment options for CSF leakage.

Practice-Based Learning and Improvement:

1. Demonstrate superior teaching and evaluation skills through working with medical students and junior residents and assessing their performance.
2. Develop awareness of weaknesses of junior residents and bringing them to the attention of the attending or the PD as appropriate.
3. Effectively educate patients and other healthcare professionals about otolaryngic disease, treatment, and prevention.

Interpersonal and Communication Skills:

1. Demonstrate mastery of communication skills when interacting with patients across the socioeconomic spectrum such as self-pay cosmetic patients and uninsured trauma patients.
2. Lead morning rounds and teach the R3 how to communicate information effectively to attendings, consulting medical services, and allied health professionals.
3. Demonstrate mastery of effective dictation and/or transcription of clinical notes.
4. Meet all requirements for timely completion of medical records and oversee the same for junior residents.

Professionalism:

1. Demonstrate compassion, integrity, and respect for others and for a diverse patient population.
2. Demonstrate responsiveness to patient needs that supersedes self-interest.
3. Show respect for patient privacy and autonomy.

Systems-Based Practice:

1. Develop mastering of delivering health care in different physical settings (outpatient clinic, inpatient rooms, OR, ER)
2. Demonstrate mastery of the safe and cost-effective use of diagnostic and imaging modalities.
3. Present cases at monthly Morbidity and Mortality conference to develop skills necessary to identify system errors and suggestions for systemic change.
4. Demonstrate strong understanding of medical pre-authorization and ICD-9 and CPT coding.

GOLD Clinical Service Guidelines

For facial plastic and reconstructive surgery patients:

Photos taken in the clinic and OR of facial plastic and reconstructive patients are an important part of the education process, and we must balance that educational need against patient privacy issues. While every patient signs a release, we must be careful to prevent widespread dissemination of these photos. Resident shall destroy/delete ALL photos they have been used for their educational purpose. After prepping for a case, the file must be permanently and completely deleted. After use in a presentation, the photo must be deleted from the presentation. **Residents are not permitted to leave the program with print or digital photographs of patients in their possession.** These photographs are part of the medical record, and HIPAA regulations must be observed at all times.

Working with Dr. Ward

- Drape with head drape, over forehead (not covering eyes) using two towel clips. Square off with blue towels, then split sheet and no towel clips.
- Close sublabial incisions with 3-0 vicryl in running horizontal mattress. Then simple running over that with 4-0 vicryl.
- For orbital floor or ZMC fractures, be sure to do a forced duction test at the conclusion of the case to ensure there is no entrapment.
- For any patient who has an incision in the periorbital region, give prescriptions and instructions for antibiotic ophthalmic ointment and artificial tears.
- For Mohs reconstructions, Ward will typically see the patient for the first time in pre-op. In addition to the usual paperwork, you will also need to put a full Mohs consult note in Epic and talk with him to see if the patient is a research study candidate.
- He has operative note templates that he uses for the majority of his typical cases. If you don't have them already, just ask him or one of the other residents to send them to you.
- He also has detailed step by step instructions for several procedures that can be helpful in preparing for a case. If you don't have them, ask him for them.
- He has postop instruction sheets that his patients should go home with, as well. They are kept in Same Day.
- His normal routine is to have all patients seen prior to surgery for a pre-operative H&P where they sign consent, receive nursing instruction, and receive post-operative antibiotics. On the day of surgery, please review the consent form and verify the patient received their medications.
- The pain control medication of choice is Norco 5/325, 1-2 tablets po q4 hours prn, #20, refill: 0.
- The antibiotic of choice is Keflex 500 mg po TID x 7 days with zero refills. If PCN allergic, then use Clindamycin 300 mg po TID x 7 days. Antibiotics are used for all post op rhinoplasty and skin cases.
- All forehead flap patients should receive a prescription for Zofran 4 mg po q4h PRN N/V, #15, 0 refills.

For rhinology and sinus surgery patients:

Come to clinic prepared with knowledge of relevant radiographic sinus anatomy. Prior to being roomed, patients fill out a sinus questionnaire. Review the questionnaire prior to entering the patient's room to help focus appropriate medical history questions.

Before operating, review Dr. Orlandi's slide show on sinus anatomy. Review the "Endoscopic Sinus Surgery Appendix" to be familiar with common techniques used in endoscopic sinus surgery.

In clinic:

The resident's main job is to see all the new patients and preops. Each new patient should have a CT scan to review. For documentation, add in the CT scan and physical exam findings in the EMR in epic. Dr. Orlandi's assistant will complete the rest of the note. For preop pts, there is a preop note template that you fill out. Listen to patient's heart and lungs, answer any questions, and have the patient sign consent done. It is the resident's responsibility to hold the consent until the day of surgery.

OR prep:

- If Stealth will be used in the case, upload the patient's CT scan the night before to make sure it works.
- Place the consent in the preop chart by 7:15am.
- There is a white binder in OR 8 with Dr. Orlandi's preferred setup and checklist. Typically, he will have a scrub/circulator that knows him well and will do it correctly, but if not, it is the resident's responsibility to make sure everything in the binder is performed. There are checklist for both the scrub and the circulator that should be reviewed by appropriate parties before Dr. Orlandi enters the OR.
- Patient will be rotated 180 degrees. Endotracheal tube on bottom left (no tape on upper lip).
- Perform greater palatine injections.
- Pull up CT scan on the room computer and on the Stealth if you are using it
- Drape the patient according to the binder pictures. (Triangle off nose with blue towels then split sheet.) Dr. Orlandi should be paged to the room at this point for timeout protocol.
- Afrin pledgets in nose, inject lateral nasal wall, middle turbinate, and axilla of middle turbinate, replace pledgets

For otology/neurotology patients:

Otologic examination is difficult, and requires practice and experience. When working in the clinic, please take every opportunity to examine ears with the microscope. Also, remember to practice tuning-fork testing and cranial nerve examination. When imaging is ordered, review the x-rays and then review them again with the attending physician. Review the results of vestibular evaluation and audiograms as well.

The four frequency average (500, 1000, 2000, and 3000) is computed for both bone conduction and air conduction. The air-bone gap is the difference between these two values.

Otology/neurotology is closely aligned with Neurosurgery. For combined cases in general, Neurosurgery takes care of the patient in the ICU, and Otolaryngology has primary responsibility for the patient when on the ward. Please be aware of which neurosurgeon is involved with a given case and, if questions arise, make sure those questions are directed to that neurosurgeon.

Dr. Shelton and Dr. Gurgel have different preferences while in the clinic and operating room. While it may be confusing at first, this gives residents exposure to different effective ways of doing things, which broadens the residents' education. There is a purpose behind each of their preferences, so it is important that each resident become familiar with Dr. Shelton's and Dr. Gurgel's preferences prior to working with them.

Read the chapter Surgery for Chronic Otitis Media by Sheehy each time on service.

Common Otologic Abbreviations

ABR- auditory brainstem response AN- acoustic neuroma AOM- acute otitis media Audio- audiogram B- bilateral B/L- bilateral BPV- benign positional vertigo BTE- Behind the ear C/U- cause unknown CA- cancer cart- cartilage CDP- computerized dynamic posturography CHL- conductive hearing loss Chol- cholesteatoma CI- cochlear implant COM- chronic otitis media Cong chol- congenital cholesteatoma Cong- congenital CPA- cerebellopontine pontine angle CSF- cerebrospinal fluid leak CTS- cortisporin otic drops CWD- canal wall down d- days D/C- discharge DZ- dizzy EAC- external auditory canal ECOG- electrocochleography EM shunt- endolymphatic mastoid shunt ENG- electronystagmography ENoG- electroneuronography ETD- eustachian tube dysfunction ET-eustachian tube EUA- exam under anesthesia FB- foreign body FN- facial nerve FN- facial neuroma FP- facial palsy/ paralysis Gent- gentamicin GG- geniculate ganglion H- hearing HA-hearing aid HL- hearing loss Hrg- hearing hrs- hours	HT- hearing test IAC- internal auditory canal ICW- intact canal wall IR- images reviewed Lat- lateral LVA- large vestibular aqueduct M- binocular microscope used m- months ME-middle ear Mening- meningitis MF- middle fossa min- minutes Mx- myringotomy Oblit-obliterative OE- otitis externa Oto- otosclerosis OW- oval window Perf- perforation PET- ventilation tube PF- posterior fossa PLF- perilymphatic fistula PO- post operative PTA- pure tone average PT-physical therapy RCA- risks, complications and alternatives RLVNS- retrolabyrinthine vestibular nerve section RSC- retrosigmoid craniotomy RVT- rotary chair testing RW- round window SCD- superior canal dehiscence SDS- speech discrimination score sec- seconds SN- sensorineural SNHL- sensorineural SOM- serous otitis media ST- sinus tympani ST- soft tissue STSG- split thickness graft surg- surgery T+M- tympanoplasty and mastoidectomy T-bone- temporal bone THL- total hearing loss TL- translabyrinthine
TMJ- temporal mandibular joint TN- tinnitus TR- tracings reviewed TS- tympanosclerosis Tymp- tympanoplasty	VII- facial nerve VII-XII- facial hypoglossal nerve anastomosis w- weeks XRT - radiation therapy yr- year

Working with Dr. Shelton

DON'T

- use PCA
- use IV narcotics
- order swallowing evaluations
- use mastisol with steristrips
- send patients home with walkers
- use Kerlex
- shave too little
- use staples or permanent sutures
- forget to rebalance the scope after the laser shutter has been added or removed
- use lidocaine for chronic ear surgery + FN monitor

DO

- change soiled dressings
- get foleys and penrose drains out POD #1
- use Kling
- use incentive spirometry and ambulation to treat low O2 sats
- give preop pts' prescriptions and PO appts
- remove crani dressings on POD #4
- play only classical music during local cases
- make a copy of the Operative Consent form. The nurses in clinic 9 can help you with this. Put copy in clinic chart
- put the central line on the same side as the lesion in a jugular foramen case (infratemporal fossa)- the other side must stay open for neural venous drainage.

Skull Base Feeding Orders:

- Dysphagia level 1 diet; Special Instructions: Pureed, spoon thick (UHosp)
- NPO except semisolids (no liquids) (LDS Hospital only)
- Pt. must be sitting in chair (not sitting in bed) when eating

****Write the above orders verbatim**

Explain to pt not to drink liquids and if they are brought liquids it is a mistake.

Teach pt to swallow by:

- take a large breath
- put some food in their mouth
- turn the head to the side of the lesion and tuck chin to shoulder swallow

These patients will have a small amount of aspiration initially; the best way to treat that is with ambulation and respiratory therapy.

Don't allow liquids initially but can try carbonated beverages later.

For most skull base surgical cases, swallowing studies or Speech Path consults are not necessary.

Dressings:

There is some confusion regarding the management of neuro-otologic dressings. They are to be changed every day. They generally stay on for four (4) days. If the dressing is **pristine** (i.e., no visible drainage on the dressing, totally clean and dry), it is not necessary to change the dressing. In some cases there will be drainage on the dressing the afternoon after surgery. It is best to change the dressing at this time so one can tell if there is a continued CSF leak the next morning.

Dr Shelton's Otologic OR Set-Up 1.1

Anesth----- • at foot of bed • extension for respir circuit • Antibiotics • steroids? • manitol? • tell them to keep blood pressure low & stable • if FN monitor- no paralysis or lidocaine in EAC • no NO2 Bed----- -pt turns 180 degrees -bed base set so surgeons legs fit underneath -2 straps -give anesth bed controls Chair----- - put appropriate chair on correct side -adjust chair height before you scrub Scrub Nurse----- -goes opposite surgeon -gets all pedal except laser -orient as to instrument names and what to expect (turn drill and water on/off at same time, how to hand gelfoam, that size 20- 24 suctions require the thumb piece, have 2 each of the smaller suctions up so one can be cleared while the other one is being used, arrange suctions and speculums in order of size, adjust irrigation flow with thumb screw- turn on/off with clamp etc)	Microscope----- -balance - balance again after laser shutter on/off -make sure draped properly - use sticky tabs - central eyepiece envelope for surgeon - velcro below eyecups - don't place retention straps too tight -make sure cords are not wrapped -225 or 250 lens for ears, 300 for neuro -make sure all eyepieces are pushed fully in and are zeroed -observer image oriented -TV -hooked up, image oriented, filterwheel set properly, - put monitor where Scrub and attending can see -backup light bulb operational -short arms toward surgeon -kick bucket between legs of base Facial nerve Monitor----- -put on side of surgeon, at pt's foot -set machine like Bryan told you
--	--

Surg Equip----- -know the drill pressure setting and make sure they are set right (ototome = 160, osteon= 100) -Emax set @ 40 K -suction set on "line" not "regulator" -lay out and secure your drills, suctions, & cautery -have heat lamp to dry fascia -turn on laser before you raise the stapes flap- make sure it is working -laser shutter between beamsplitter and microscope body (protect observer) Disposables----- -gelfoam cut in pieces with floxin for COM & thrombin for neuro (no gelfoam for stapes- use House- Kos ointment) plastic 16 ga angiocath on syringe -ask for disposable canal blades (Beaver 7200 & 7210) -make sure you have the proper prosthesis in the room before you start the case - for TOPs & POPs- also need tongue blade, 11 blade and 4/0 plain gut -draw 3cc of blood before start stapes- place 18 ga suction tip on syringe - close PA wound with 3/0 and 4/0 vicryl on PS2 needle	Prep & Drape----- -Don't let the pt in room unless operative ear is marked -also verify correct ear with chart note, consent and audio -shave 3 finger breadths above & behind ear for COM. Shave from ear out (preserves hair) -let mastisol dry before applying 1010 drapes -nurse preps not resident, let betadine run in EAC -drape so water will not run onto floor (Deepak effect)
---	---

Clinic with Dr. Shelton

Plan on seeing all new patients and preops. It is OK to see return patients if you have down time, but don't let it interfere with your time to see the new patients and preoperative patients.

New Patient:

Take a comprehensive past medical history and type it into the patient's EMR in EPIC. Make sure to ask and record all the questions involving vertigo and ear symptoms that appear in the template. Review past medical history and medications- especially anything that would impact surgery (i.e. heart disease, lung, anticoagulation, sleep apnea, etc.)

Useful specific questions to ask:

- Always ask about prior ear surgeries
- Acoustic patient: symptomatic (i.e. balance issues, sensation, FN), in older patient if parents are still living and/or at what age they passed away.
- Cochlear implant: better ear, hearing aids, any useful hearing, use of sign language, recent ear infections.

Perform a comprehensive physical exam. Look at all ears under the microscope and clean out ALL wax (don't use a curette). Perform fork exam with both 512 and 1024 tuning forks. Place all dirty instruments in kidney basin ("would your significant other let you leave things out like this") Record findings in EMR and all you can of impression and plan.

Review imaging and pull up for Dr. Shelton. When in doubt, T1 post contrast MRI is almost always the right one.

Present patient to Dr. Shelton in room with patient. After presenting the patient and observing the physical exam, it is OK to leave the room while Dr. Shelton is talking to the patient and see another new patient/preop if they're waiting to keep the clinic moving. Dr. Shelton will go over the diagnosis and plan with you at the end of the clinic day.

Preop Patients:

Review patient's chart prior to entering room to confirm surgery and procedure. Perform physical exam on patient, including auscultation of heart and lungs. If the patient's surgery will be performed at LDS or IMC, a history and physical sheet should be on the front of the chart and completed. If the patient will be an inpatient at LDS/IMC, a dictated History and Physical needs to be done in the intermountain dictation system. Obtain the consent from the patient and print out any post op prescriptions needed and give them to the patient. Answer any questions that you can and let them know Dr. Shelton will be in shortly (you don't need to see patient with Dr. Shelton.)

Working with Dr. Gurgel

In clinic, perform a comprehensive history and physical and enter into electronic medical record. When presenting the patient to Dr. Gurgel, always formulate a plan on what you would do if this were your patient (good practice to do in all clinics).

In the OR, always call him the day before after reviewing cases. Print out the audiogram and most recent clinic note of each patient and bring it to the OR to be taped up on the wall.