Canadian Association of General Surgeons Residents Committee

Residency Survival Guide

2017-2018 Edition

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CAGS and the Residents Committee

Welcome to General Surgery!

The Canadian Association of General Surgeons Residents Committee developed this handbook for you, a General Surgery resident. We are comprised of twenty-one residents representing all of the General Surgery programs across the country.

And, welcome to CAGS!

You are now a member of a dynamic organization that represents the voice of General Surgeons in Canada. CAGS promotes the training, education, professional development, thoughtful practice, and research essential to the provision of exemplary surgical care Canadians expect and deserve.

The CAGS Residents Committee is comprised of representation from all programs across the country and the Chair is a member of the CAGS Board. Our mission is twofold: to unify and represent the interests of all General Surgery residents across Canada, and to foster an awareness of CAGS and its activities to all General Surgery residents.

Each year, CAGS hosts the Canadian Surgery Forum in September, in a major Canadian city. As part of this national meeting, the Residents Committee hosts a symposium on a current topic of interest to Canadian General Surgery residents. Other events include a CAGS Resident's Dinner during the Forum.

The Residents Committee meets once or twice a year, and also communicates via email, web interface and teleconference as often as necessary.

Check out the resident's Facebook page at "CAGS Residents" for interesting articles and information related to General Surgery. Be sure to like our page!
Follow CAGS Residents via our Twitter account ("CAGS_Residents") as well!

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"Throw away all ambition beyond that of doing the day's work well. The travelers on the road to success live in the present, heedless of taking thought

MAKING YOUR LIFE (AND LEARNING) EASIER

for the morrow. Live neither in the past nor in the future, but let each day's work absorb your entire energies, and satisfy your wildest ambition." - Sir William Osler

General Tips:

- Learn the preferences of each attending surgeon for operative work and ward management. Keep notes on each attending in a notebook/smartphone to access them easily at a later date.
- Buy a blank drawing book to sketch out the steps of an operation soon after you see or do a case, and keep this book in your locker to review quickly the next time you happen to scrub in on, say, a right hemicolectomy with Dr. X. At the end of five years, you will find you have notes written on many different surgeon's preference to perform the same operation, which you may want to refer to when you're starting out in practice and developing your own techniques.
- Copy and save an operative note that the staff has dictated, and save it as a template for future dictations.
- Understand why you are doing a task on the ward or a surgical procedure. Don't just do the task because you are assigned to it. Learn by asking questions.
- Knowledge can be gained daily from experience; however, you will not get the big picture without reading.
- Remember, even if you are not the primary surgeon, there is always educational value in the operating room.

Getting your work done:

- Do not procrastinate, especially with OR reports and discharge summaries, unless you are prepared to spend some lonely nights sweating it out in a cubicle in Health Records trying to remember details. We have all been there, and it's unnecessary.
- Check up on things in a timely fashion so that you can pick up earlier in the day if tasks were forgotten, cancelled or missed.
- Do things that depend on others first, ie. Calling for consults or scheduling xrays or other tests.
- Fill out paperwork and scripts the day before a patient is planned to go home to save time in the morning.

- Delegate but do not forget to follow-up on your assistants (other residents and medical students). One useful technique is to request that each assistant report back to you on his or her progress ("closing the loop").
- Be seen. Your staff will not know you are working hard if they do not see you. Try to maximize face to face time during each rotation. If you must spend the day on the ward instead of the clinic or OR, let attending's or the chief resident know why and make sure you inform them of important updates.
- Remember, your first priority is to learn to be a surgeon. There will always be "scutwork" to do, but make the OR a priority and try to use time in between cases for "scut" as much as you can.
- Start a consult even if you don't think you have time to finish. Patients don't mind having their exam interrupted; it is better than not having seen the doctor at all.

Keeping up with reading

- Read around cases on the ward and in clinic. You will remember more information if it is associated with a patient experience and real context.
- Purchase a standard surgical text and a good atlas (refer to the recommendations later in this handbook).
- Consider purchasing or subscribing to online copies of textbooks to review if your book is not available in the hospital.
- CMAJ and other journals arrive in our mailboxes but rarely get read – if there is an article that sounds like it's worth reading, tear it out and put in your scrubs pocket at the beginning of your day. You will find some down-time somewhere during the day to read it such as waiting for your next case, over lunch, etc…
- In a similar vein, carry copies of papers you've been meaning to read eg. journal club, prep for the next teaching session or rounds, etc…
- Listen to medical podcasts while commuting or working out.
- Keep a copy of a textbook in your car for the unexpected times you find extra time to do a little reading. You will be surprised by how many times you pull it out if you have it with you.
- Buy a filing cabinet and stay organized. Consider keeping journal articles organized by topic. It's just as easy to throw a paper in the drawer under "Crohn's Papers" than on your floor (or in the trash). This provides material ready to grab when you find out you're doing rounds on a specific topic or need to prep for academic half-day.

Preparing for the OR

- Know what's going to happen beforehand; you can usually get the OR list ahead of time from the OR desk or from your staff's secretary.
- It goes without saying – whenever possible meet the patient before the procedure! Make time to introduce yourself, and give yourself the opportunity

to match a patient's presentation with their pathology (check pre-op imaging and labs)

- Pay attention to the operative procedure, but also patient positioning, safety checklists, trocar positioning etc.
- Arrive in the OR early to prepare the patient. Ensure the lights are in the appropriate position to start (and able to move easily), insert the Foley catheter (if needed), position the patient, shave if necessary (if your staff or senior is shaving, you can get the tape ready to pick up the hair), etc.
- Know the relevant anatomy, including injuries to avoid.
- Discuss the case with the attending at the scrub sink or post-operatively.
- Most of us feel it is acceptable to ask to do something in the OR such as opening or performing the initial incision.

NUTS AND BOLTS OF ANY NEW ROTATION

Things to do before you start a new rotation

- Get oriented to your hospital sites; know how long it takes you to get from one place to another.
- Meet your Program Director and Program Administrator.
- Get your pager and know where to get batteries.
- Organize your CMPA insurance.
- Know where your call room is.
- Know where to secure valuables in the hospital / lockers.
- Know the scrubs dispensing system in your hospital.
- Find out where cafeteria and cafes are... and what time they close!
- Find out where Radiology is, and where the radiologists hang out.
- Find out where Emergency is, and where the patient charts are kept.
- Find out where Pathology is, and where to drop off specimens you want rushed.
- Get your parking pass.
- Get your nametag.
- Contact your first senior/Chief resident to get any additional orienting tips for a particular rotation about a week BEFORE you start.

ON CALL

Let's face it; during residency you are a real "resident" of the hospital for some portion of your time. You probably sleep in a call room ¼ of your nights, most of your meal times will happen in the hospital cafeteria, and much of your social network will include other housestaff by necessity. It is important to make this time not just tolerable, but as positive as you can. There are many simple things that other residents have found that make the whole experience more comfortable.

There is some information that you can only get by talking to other residents. Get the scoop on hospital secrets such as: Where is the best place to have a shower? Where can you find something to eat late at night? Where do you find extra linens/towels/warmed blankets?

List of On-Call Niceties

- Lock for your locker
- Small snacks. Suggestions: "filling things" with protein such as cheese, almonds, box of granola bars/power bars, instant oatmeal or noodles, tuna, fruit cups, chocolate milk, and any other snacks that you enjoy. **Do not underestimate the power of a snack.**
- Fresh pair of socks and underwear. Many residents claim just changing these things can make a big difference in how they feel.
- Spare t-shirt. If you don't get a chance to change your greens, at least you can have a new shirt on underneath your old ones.
- Toiletries – antiperspirant, toothbrush and toothpaste, shampoo, conditioner, brush, shower gel/soap, face wash, and skin care products. Keep your favourite kind, not just the travel size-bin special!
- Hair elastics or clips
- Body lotion/hand lotion
- Your favourite prep book or clinical handbook
- Odour eaters/foot spray for any shoes that stay in your locker

- Sweater/sweatshirt
- Change of clothes for clinic or after-work outing

Handover

A proper and concise handover is crucial for optimal patient care. Handover is the term that is used to describe the communication that occurs between residents when patient care responsibilities are being transferred. As every program will have slightly different methods of doing handover our discussion will include general principles only. Call responsibilities vary slightly from program-to-program so clarify your duties before you start.

The following are some general principles that apply to giving a proper handover. First and foremost - be concise! We are all very busy people and handover itself should at the **most** take 30 minutes. Second, the information that you give must be accurate, so know your patients. Sometimes there is no time to further read over a patient's chart.

There are two main types of handover for residents - the handover given to the on-call person from the day staff and the one given by the on-call person to the day staff the next morning. The expectations of each vary.

When handing over to the on-call resident before leaving for the day, there are a few key aspects to cover (some of these may or may not apply depending on your on-call responsibilities). With regard to floor patients the on-call resident does not generally need a comprehensive discussion of every patient. Rather, give a brief description of a particular patient, which you feel may be a concern during the night hours. Since you, as the day staff, know the patients quite well, giving the on-call resident a suggestion for overnight management is not unwelcome. If the on-call resident will also be handling consults than a brief mention of any outstanding consults that the day team has not yet completed must be mentioned. Also, if you know of any outstanding patient transfers from other health care centres the on-call person should be made aware of these so that they are not surprised when they arrive. Finally, any operations that are scheduled to occur after hours should be discussed. This would include the patient's name, what surgery is planed, a BRIEF presenting history on the patient and any diagnostic work-up that has been performed. This should merely be a jumping point for the on-call resident as it is their responsibility to then meet and examine the patient prior to the operation. The other key piece of information is whether a consent form has been signed or not, however, again it is the on-call resident's responsibility to ensure this is completed prior to the procedure.

Finally, when the call shift is completed and the on-call resident is handing over to the day team there are a few other issues to keep in mind. Firstly, any new admissions overnight should be discussed. Generally, the patient's name, age, brief history of presenting illness, past medical and surgical history and any diagnostic tests that were performed should be stated. Again, this should be brief as there may be many patients to discuss. Any surgeries that were performed after hours should briefly be discussed including the procedure performed, any pertinent intra-operative findings and specific post-operative instructions. Finally, with regard to floor patients only major issues should be brought up, such as any tests or consults that need to be completed during the day.

Sometimes residents wish to hurry a proper handover as it can be a time consuming process but this does not need to be the case! Many medical errors are committed when transferring patient care and these can be avoided if proper information is given. A proper handover should strike the balance between being thorough and concise.

BEING A SENIOR RESIDENT

How to be Efficient on Ward Rounds

- Daily expectations of every team member must be established clearly, and early. Formally orient any new residents or medical students to the ward and to what happens during ward rounds. Ask for this information if you are the new resident in question.
- Establish a routine. Every morning should be similar so that things go smoothly and efficiently, and there is no uncertainty about finishing on time.
- If you want to be on time, you have got to be early.
- Plan ahead and start rounds at an appropriate time based on the team's schedule that day.
- Medical students (and juniors) should be encouraged to take an active role in getting the team organized to start rounds. Every member of the team should be provided with a patient list, bloodwork must be reviewed, and issues from the nurses' problem board and last night's on-call resident should be noted before starting.
- Once you have rounded, meet as a team to run the patient list and discuss the plan for the day for every patient. This is essential to avoid errors, unnecessary duplication of work, and late or missed tasks.
- Preserve a small amount of time for coffee and teaching every morning before dividing up the day's work and dispersing. Many of us feel this goes a long way to keep up team morale.

Congrats! Now you have become a senior resident. After all the hard work and being up all night long between the ward and emergency department, answering those endless pagers, you got the chance to show your skills and knowledge, but with that comes great responsibility toward your juniors and medical students and high expectation from your staff. Here are few tips to help you in your senior years.

- In every situation there is an opportunity to learn something. The OR, clinic, the ER, and the ward. You learn how to be a surgeon in many more places than just the operating room.
  John Paro , Plastic and Reconstructive Surgeon at Stanford University Medical Center
- Every case is a learning opportunity. There is always more you can learn, and the more you practice the more you get better. Pick an aspect of the case you aren't as comfortable with and review that part, over time you will gain knowledge in small increments.
- “Don’t worry about the numbers, the numbers will come. Focus on the steps of the procedure, perfect each one and then move to the next.”

  Sameer Trikha, (SERI) Glaucoma fellow at the Singapore Eye Centre.
- Senior residents are expected to come to OR prepared and on time, the day before look at clinic notes, imaging, pathology, anaesthesia consult. Know your patient and review the procedure. Be there before the attending, take responsibility for positioning, prepping and draping the patient.
- Learn when not to operate.
- Accept feedback and use it effectively for self-learning and improvement. You will probably end up swallowing your pride more in your chief year than in your intern year.
- Invest time in medical students and juniors; they are the future of your program. Develop teaching skill and facilitate their learning. Be a mentor and positive role model, they are looking up to you, and always provide backup when they need it.

TEACHING AS A RESIDENT

- When something goes wrong, try not to lecture, but rather take the opportunity to teach.
- You are responsible for your team and your patients. Evaluate all critical new consult and sick patients. See your post op patient personally. Document ALL encounters.
- Patient care is a team effort. Work collaboratively with other team member, nurses and allied health. Delegate and supervise.
- Be professional, look professional, and develop your own style!

Chalk-talk/Coffee-talks

Teaching is one of your roles as a resident. You are partly responsible for educating medical students who rotate through the service you happen to be on, and you have a lot of valuable experience and knowledge to draw from and share – even though as trainees, we still have a lot to learn.

Many of the most valuable learning opportunities are informal and brief. They require little preparation but can have a lasting impression on students. A few tips:

- Bring a prop. This can be anything: a photo, sutures, a chest tube, a photocopy of a textbook figure without labels on it, etc. Use your imagination. The prop can keep people interested and caters to different learning styles.
- Ask students what they want to talk about. For example, is there a recent patient, diagnostic test, OSCE station etc. they want to know more about?
- Keep the scope defined: try to stay on a topic and keep it at their knowledge level. If things start getting out of hand, designate another time and place for additional teaching.
- If there are questions you do not know the answer to, look it up together.
- Pick a comfortable environment that is not intimidating. This may mean finding a quiet room or cafeteria corner, rather than in the OR lounge in front of staff members.
- Make a note of teachable topics as they arise to be returned to later in the day when there is time.

Here is a list of good topics to get you started with your students:

- Fluids and electrolytes
- OR etiquette/scrubbing
- Suturing
- Admission orders

- Postoperative orders
- Interpreting ABGs
- Primary survey of trauma patient
- Abdominal pain
- Breast exam
- Bowel obstruction
- Diverticulitis
- GI bleeding
- Antibiotic prophylaxis
- Post op chest pain
- Advanced procedures such as chest tubes, central lines
- Post op fever
- Interpreting X-Rays
- Appendicitis
- Biliary diseases
- Digital rectal exam
- Acute abdomen
- Pancreatitis
- Perianal disease
- Post op SOB
- Hernias
- How to dictate

WELL-BEING

How to keep your pipes tight

- Physical fitness improves concentration as well as ability to survive call.
- Find a gym CLOSE to your working place or to your home. Otherwise you will not go.
- Drop-in classes: register for regular aerobic, martial arts, dance or any other type of class and force yourself to go at least once a week.
- Consider buying an aerobic exercise machine (can be more cost-effective than the gym).
- At work, take the stairs!

How to keep that pretty face

Being awake for more than 24 hours increases preventable medical errors by seven fold, results in a 60% increase in accidental percutaneous injuries, decreases vigilance, and doubles the risk of motor vehicle collisions. The performance impairment of fatigue is similar to a blood alcohol level of 0.05%. Therefore, proper sleep hygiene is essential. We are all adult learners; however, consider what may be at stake if you stay post-call because "If I leave, it looks bad."

Tips for good sleep hygiene

- Remember, your bed is for sleep and sex only! Do not bring medical books to bed. You need a worry-free sleep.
- Keep your bedroom temperature comfortable - not too cold or hot (cooler room is better than a warm one)
- Try to have a regular post-call pattern: give yourself at least 4 hours of awake time before you go back to bed.
- Perform a 20-minute 'wind-down' before going to bed (bath, TV show, etc.).
- Don't stress out over not getting enough sleep; it will only make matters worse.
- Avoid looking at the clock in the middle of the night - it only creates anxiety. Turn the clock away from you so you have to reach out to see it during the night. Chances are you won't and will just fall back asleep.
- If you cannot fall asleep within 30 minutes, get up and do something light until you become sleepy again.
- Wear earplugs, turn off pager/cell phone at home, shut off all lights, and close windows.

- Some residents get heavy drapes or blinds to have a “night time” room anytime.
- Try to avoid alcohol, nicotine and caffeine before bedtime. Caffeine however has little effect on subsequent sleep in normal subjects if given during the day; avoid it at night if possible.
- Try to avoid exercise for at least 2 hours before bedtime. Exercise in the late afternoon or early evening but not close to bedtime. Regular exercise helps regulate sleep patterns.
- Try to maintain regular sleep-wake times if you can, even on weekends
- If you must eat before sleep, eat lightly. Do not go to bed hungry.
- On-call naps as short as 10 minutes can help with mental alertness, especially when good sleep is unobtainable. Try to avoid naps between 1-2 hours in length.

References:

Stepanski EJ, Wyatt JK, Use of sleep hygiene in the treatment of insomnia; Sleep Medicine Reviews (2003), Vol 7, No 3 pp215-225.

Ficca et al., Naps, cognition and performance. Sleep Medicine Reviews (2009), doi:10.1015/j.smrv.2009.09.005

Bradley, WG: Neurology in Clinical Practice, 5th ed. (2008) Butterworth-Heinemann.

Staying sane

Residents are vital to the health care systems we work in, and we play many roles within it – including professional, learner, teacher, and mentor. We have contact with many different people, with many different personalities and views towards residents. We are exposed to numerous events that can be both troubling and difficult. We work in a field in which most people cannot and will not ever fully understand. We have to make life and death decisions (sometimes very quickly). We work long hours, and yet have to find time to study. Taking in all of this, staying sane can sometimes seem hard. At some point in residency we all have a moment and think to ourselves “Why am I doing this?” Staying sane and keeping well balanced is difficult and can be one of the most challenging aspects of residency. There is help out there when needed. Remember, we have to take care of ourselves FIRST before we can take good care of our patients.

Here are a few tips to keeping good mental health:

- Read non-medical books – you will burnout pretty quick if all you read for five years is surgical textbooks. Try to make a routine for “non-medical reading time”, no matter how long that time is or what it is you choose to read.
- Keep up your non-medical interests - they may have to be placed on the back burner at times, but do not drop the things that interest you most. They are important outlets.
- Relaxation exercises can help make the body more relaxed (which in turn will relax the mind):
  - Abdominal breathing
  - Shoulder shrugs (inhale while pulling your shoulders up towards your head rotate your shoulders and exhale while letting your shoulders fall back down)
  - Head rolls (exhale while letting your chin fall inhale while rotating your head)
  - Progressive muscle relaxation (alternating tension and relaxation of each muscle group)
- DO NOT underestimate the prevalence of mental health issues and substance abuse in residency. Ask for help! There are many places to go. Recognize when you need help and seek it out before it is too late.
- The provincial psychologists directory is easy to use. Insurance coverage is up to 80%.
- We all should be able to work in a harassment free workplace. Every school has a policy in place to deal with intimidation and harassment. Report an incident if you feel uncomfortable.

Websites

http://www.cpo.on.ca
http://www.psychologistsassociation.ab.ca/
http://www.cpmb.ca/
http://www.skcp.ca/
http://www.psychologists.bc.ca/
http://www.apns.ca/
http://www.apnl.ca/
https://www3.ordrepsy.qc.ca/en/index.sn
https://www.cma.ca/Assets/assets-library/document/en/practice-management-and-wellness/Mentalhealthstrat_final-e.pdf

How to keep your honey

- Inform your partner of work hours and responsibilities prior to starting residency or rotations (and keep them up to date of any changes).

Remember, they are going through residency with you (and are making a lot of sacrifices as well - do NOT take them for granted)!

- Attempt an "official" date once every two weeks (plan in advance).
- Make official calendar with calls, classes etc. (include partner's schedule).
- Try to call home once a shift, even if it's just to say Hi/Miss you/Love you.
- Acknowledge when you had a bad day and share feelings but do not transfer work stress onto partner.
- Have unofficial dates IN hospital—bring or order dinner in.
- Cultivate relationships with non-medical friends to avoid medical talk and do non-medical activities (you would be amazed by how good it feels to get away and realize there are more things to life than the hospital).
- MAKE yourself go out EVEN if you are tired, now and then—you won't regret it.
- Attend residents' social events and partner's work events.
- Bond with other surgical residents so you have other outlets for "shop talk."

Pregnancy – 'cuz only Obs/Gyne residents should deliver on call

- Timing: There never seems to be a "best time," of course. Consider that your workload will be different and likely more flexible during a research year(s). Talk to your Program Director and other residents who have been pregnant during their residency.
- Maternity leave: Refer to your province's resident's association contract and your programs' policies. The minimum is 3 months.
- Paternity leave: As above.
- Work restrictions: You will need to consult with your Program Director. Find out hours restrictions from your provincial residents association and set a clear date for when you are to stop taking call.
- Childcare: Inform yourself of in-hospital daycare.
- Breastfeeding: Consider buying a breast pump for the hospital.

How to keep money in your wallet

- Avoid the temptation of a post call shopping spree
- Find an accountant EARLY and make a budget. Talk to upper year residents and fellows who may be able to suggest someone. MD Management also offers free accountant service as part of your CMA membership:
- *https://mdm.ca/md-wealth-management*
- Budget for exam costs:
  - LMCC Part 2: $2470 (late $3390)
  - POS: $780 + pre-registration $645
  - Royal College Exam: $4155

- FIND OUT APPLICATION DEADLINES and make sure you apply on time.* Late fees are substantial.
- Other dues:
  - CMPA
  - Disability insurance
  - CMA and provincial associations
  - American College of surgeons (ACS)
  - Health plan and Dental plan (included in some programs)
  - Tuition fees
- Other costs to factor in:
  - Textbooks (find out if your program will provide any before buying)
  - Conferences (find out what your program will cover)
  - Travel home and holidays
  - Loan consolidation
  - RRSP (REER)
- Save all your receipts for tax time. Make a folder to put these in over the course of the year so that you aren't scrambling in the spring. Talk to your accountant about which things might be deductible. These may include moving expenses, books, loupes, cell phones, bills, PDA's, computer equipment, office furniture, gas receipts and car expenses. You may also be able to claim once you start a practice, so keep them organized.

Time savers

- Consider a cleaning service if you can budget for it. Your time is precious and you may want to avoid spending your free time doing chores and tasks you do not enjoy. Even once-monthly services may make a difference for you.
- Food: buy bulk granola bars, nuts etc. (non-perishable goods) so you will not have to go to the grocery store every week. Many of us love our Costco memberships.
- Laundry drop-off on the way to work
- Cook in batches; freeze leftovers for lunches and when you are too tired to cook.

Safety Precautions

- Keep your immunizations up to date
- Double glove (there is good evidence about this)
- REPORT YOUR NEEDLE STICK INJURIES
- Always wear glasses, or buy inexpensive shields (MEC sells them for less than $20), or use what the OR provides.
- Compression stockings: studies show that even low levels of compression reduce the feeling of leg fatigue caused by dependent leg edema. Most programs cover the costs of several pairs. They are worth the investment.

TEXTBOOKS WE LIKE

- Buy good shoes. Many "comfortable" OR shoes (eg. crocs) are not actually good for your feet. Consider making an appointment at a shoe place to get a proper fit and orthotics.
- If you're sick, take the day off making sure you contact your supervisor and team and arrange for another resident to cover for you.
- Wash hands regularly (Alcohol gels do NOT kill C. difficile).
- Call the CMPA/ACPM or your provincial resident association for advice on ANY legal issue: https://oplfrpd5.cmpa-acpm.ca/home, *feedback@cmpa.org*, 1 800 267-6522

Other useful websites:
http://www.ephysicianhealth.com
http://www.cma.ca

There are a dizzying number of textbooks available. The trick is picking the right one or two for you from each "category." Some people prefer electronic versions, which are generally cheaper, and you can store multiple books on one device.

Before we begin the details, our general consensus on textbooks:

MUST HAVE ONE OF

- **Schwartz**
- **Sabiston**
- **Greenfield's**
- **American College of Surgeons**

ONE SURGICAL ATLAS

CAMERON (consider after Principles of Surgery)

Senior level: access to "Surgical Clinics of North America" through CMA website

1. Standard surgical textbooks: The Legends

All available online for free at http://www.cma.ca. These books are generally equivalent, so pick one to start your adventure in General Surgery Reading. We suggest you borrow them from the library or peruse online before you buy.

Principles of Surgery: Schwartz

- Advantages: General guide on all general surgical issues. Anatomy, embryology, pathophysiology.
- Disadvantages: Not an atlas or surgical technique book. Too detailed at times, difficult to recall all material read in one sitting.
- Use for: Outlining presentations, POS, a starting point for junior residents, general overview of all topics.

Sabistons

- Advantages: General guide on all general surgical issues. Includes anatomy, embryology, pathophysiology. Some of us think it is the most useful of the three in preparing for oral exams and attending's quizzes as opposed to Greenfield's being better for preparing for written exams.
- Disadvantages: Not an atlas or surgical technique book. Too detailed at times, difficult to recall all material read in one sitting.
- Use for: Outlining presentations, POS, acts as starting point for junior residents, general overview of all topics.

Greenfield

- Advantages: Some find it easier to read and remember chapter details.
- Disadvantages: Again, no specific operative details.
- Use for: Overview for junior and senior residents, good review book.

ACS Surgery. (American College of Surgeons)

- Advantages: Available online, updated yearly, free with your ACS or CMA membership, review questions and end of every chapter.

Cameron: Current Surgical Therapy

- Advantages: Clinically relevant, contains algorithms, good preparation for senior years post POS. Provides a very focused and manageable overview of specific subtopics.

- Disadvantages: Minimal anatomical information, minimal pathophysiology, difficult for junior residents due to lack of background knowledge. Different authors for each edition therefore little continuity between editions.

2. Other helpful general references

Lange: Current Diagnosis and Treatment - Surgery

- Advantages: Brief, concise, portable, introduction to a topic, information on other surgical specialties.
- Disadvantages: Not enough detail. Not appropriate for advanced levels.
- Use for: Junior residents, medical students, on call issues.

Rush Review of Surgery

- Advantages: Pure question and answer format. Mostly only useful for self-assessment as there is only brief explanation of answers. Very helpful to check knowledge of concepts and identify weak areas.

ABSITE Review

- Advantages: Good reference for POS, portable, easy to read, additional subspecialty information.
- Disadvantages: Too general for senior years, no surgical techniques.

Operative Dictations in General and Vascular surgery

- Advantages: Helpful for learning to dictate. Great script/starting point.

Top Knife

- Well-loved book on emergency general surgery. Easy to read style, fun for all ages. Great tips for surgeons interested in trauma.

Cope's Early Diagnosis of the Acute Abdomen

- Advantages: reasoned approach to physical exam. A classic. Latest edition is 2010.
- Disadvantages: Not a good quick reference, this is more a cover-to-cover read.

Chassin's Operative Strategy in General Surgery: An expositive atlas

- Advantages: Excellent approach to most general surgical operations in a concise and practical format. Nice figures and well written. Good description of the steps of an operation, useful for preparing for oral exams.
- Disadvantages: May not be the most up to date textbook regarding surgical decision-making.

Shackelford, Surgery of the Alimentary Tract

- Advantages: Complete review of pathologies of the GI tract. Used by some programs as THE review book for PGY-5. Especially good for pancreaticobiliary tract. Outstanding figures.
- Disadvantages: Does not cover non-GI general surgery.

Acute Care Surgery: Principles and Practices

- Advantages: Good for residents interested in acute care surgery/trauma/ICU. Head-to-toe approach to surgical emergencies.
- Disadvantages: NOT a review book.

3. Atlases, Books on Surgical Technique

Skandalakis: Surgical Anatomy and Technique: A pocket manual

- Advantages: Quick reference for surgical anatomy and technique if you have not reviewed the operation beforehand. Good to keep in locker.
- Disadvantages: Not very detailed, no thorough anatomy, all pictures in black and white.
- Use for: Reviewing operation and techniques pre-op.

Zollinger: Atlas of surgical operations

- Advantages: Lots of pictures, the classic atlas.
- Disadvantages: Minimal written detail, cumbersome and not portable.

Mastery of surgery

- Advantages: Covers a lot of laparoscopic and open surgery, information on pre-operative and post-operative care, thorough review of anatomy, excellent colour pictures. Available online.
- Disadvantages: Not a quick reference, not always up to date.
- Use for: Learning operations.

Operative anatomy: Scott-Connor, Dawson

- Advantages: Focuses in on important anatomy for surgical procedure, good written details on how to perform operation.
- Disadvantages: Could use more pictures, not a lot of information on pre and post-operative management and complications.
- Use for: Learning operations

Maingot's Abdominal operations, Volume I and II

- Advantages: Good mix of text and atlas. Great technical details. Clear illustrations and good literature review. Benefits both senior resident and general surgeon.
- Disadvantages: Not portable (except newest edition)

Atlas of Laparoscopic Surgery

- Advantages: Atlas of laparoscopic procedures, both basic and advanced. Includes commentaries and illustrations.

4. Pocket references

The Mont Reid Surgical Handbook

Good for R1 and preparing right before a case or consult, point form and brief.

On Call: Principles and Protocols, and On Call: Surgery

Excellent reference for ward management, junior resident level.

MD Anderson

Concise review on all cancers, including epidemiology, diagnostic tests and treatment algorithms. Good references. Only draw-back: very specific to MD Anderson protocols.

University of Toronto Surgical Oncology Manual

A concise and practical guide to nearly all cancers general surgeons have to deal with.

WEBSITES AND APPS WE LIKE

WEBSITES

National Guideline Clearinghouse
http://www.guideline.gov/browse/by-topic.aspx
Clinical guidelines from worldwide websites.

New England Journal of Medicine Clinical Videos
http://content.nejm.org/misc/videos.dtl
Great resource for day-to-day procedures on the ward.

Websurg
http://www.websurg.com/index.php
Laparoscopic Surgery website. Contains over 1000 instructional videos on procedures, operative techniques, and lectures. Free registration.

Access Surgery
http://accesssurgery.mhmedical.com
Excellent collection of a diverse set of surgical resources. Includes reference, atlas, operative, and subspecialty textbooks, journal access, procedural videos, journal reviews, and board review questions. Requires subscription, provided by some programs.

EAST Trauma Guidelines
http://www.east.org/resources/treatment-guidelines/category/trauma
Evidence-based guidelines for trauma.

The Cochrane Collaboration, Cochrane Reviews
http://summaries.cochrane.org
Free Cochrane Reviews abstracts, an agreement for continuation of free full access to the Cochrane Library is in discussion. For now, enjoy the free access if logging in from a Canadian IP address.

Wheeless' Textbook of Orthopaedics
http://www.wheelessonline.com/

Online interactive orthopaedic atlas and textbook. Excellent for trauma and general use.

UpToDate
www.uptodate.com

Canadian Medical Association clinical resources
www.cma.ca
Free access to surgical textbooks and journals for all residents and medical students.

WebMD
http://www.webmd.com
Can have current general surgery articles e-mailed to you.

CAGS Website for journals
http://www.cags-accg.ca/index.php?page=128

American College of Surgeons
http://www.facs.org/

Evidence-Based Medicine Education
http://www.cebm.net/

Vancouver Coastal Health Therapeutic Toolset
http://www.vhpharmsci.com/VHFormulary/Tools/Tools-Index.htm
Collection of therapeutic tools, (eg. Equianalgesic dose converters, antibiograms, electrolyte replacement cards, etc.).Very useful.

NCCN Guidelines
http://www.nccn.org/professionals/physician_gls/f_guidelines.asp
Great resource for oncology

PODCASTS

EMCrit by Scott Weingart

Emergency department and critical care resuscitation podcast addressing all things related to the crashing, critically ill patient. Although geared towards ED physicians, it's very useful for our ICU rotations.

Link: https://itunes.apple.com/ca/podcast/emcrit-podcast-emergency-department/id314020330?mt=2

ICU Rounds by Jeff Guy
A podcast dedicated to the teaching of critical care. The focus audience is physicians, residents, medical students, nurses, therapists, and paramedics. These are topics that arise while on teaching rounds in the Burn ICU at Vanderbilt Medical Center. A broad scope of critical care and prehospital topics are presented as well as recent journal articles and medical news.

Link: https://itunes.apple.com/us/podcast/icu-rounds/id254707344

SMARTPHONE APPS

U of T Trauma Protocols
A multiplatform- and web-app created to disseminate the University of Toronto's trauma guidelines in a convenient, easily accessible manner. The guidelines were developed through input from Trauma Team Leaders in the Departments of Surgery and Emergency Medicine at the University of Toronto. They are designed to be informative and to provide some direction for housestaff who are becoming familiar with the care of the injured patient.

iOS Link: https://itunes.apple.com/ca/app/u-of-t-trauma-protocols/id595490398?mt=8

Android Link: https://play.google.com/store/apps/details?id=com.uoft_Trauma_Protocols

QxMD Read
How many of you receive articles in hardcopy, through email, or via specialized journal apps? It is tough to keep track, stay current and create a good database with information coming in all different formats. A new App by QxMD called Read allows you to get instant access in PDF format to a slew of Journals through your University's VPN service. This app for iPhone or iPad allows you to track journals of interest and download articles you want to keep. Alerts are sent to your email on a regular basis. The only little annoyance is that you have to email yourself the PDF to keep in your files.

Best Practice in General Surgery (BPiGS)
Created by University of Toronto with easy to follow guidelines in antibiotic administration, bowel prep, thromboprophylaxis and more. Available for iOS only.

Other Apps

- Medical Calc
- Mediquations
- MediMath
- ECG Guide
- Eponyms
- ePocrates

GIVING ROUNDS

Presentations

Whether you like it or not, you are going to spend regular amounts of time speaking on a General Surgery topic in front of colleagues and staff, for years to come. The only way this gets easier is by doing it. Embrace it; it is one of the most valuable parts of your learning. Presenting rounds can allow you to develop as a person and a teacher, and gives you a deeper understanding of a particular area in surgery. The topics you present will become deeply entrenched in your memory. As with everything else, the more energy you put into it, the more you'll get out of it, so prepare as thoroughly as you can.

Do not underestimate the opportunity this represents to show your colleagues and teachers what a valuable member of the team you are. Making a good impression early on will make people look forward to hearing you present. Take the extra time to go through the following steps as you prepare your next presentation. It will pay off in how prepared you are (or just seem!)

Checklist:

<u>**BEFORE THE DAY**</u>

- **Know what is expected of you.** What is the format: How long does the presenter usually talk for? Is it case or evidence based? Who leads discussion? Do expectations vary by presenter's training level?
- **Know your room.** Will the door be unlocked when you arrive? Will there be a computer and projector there or do you have to be the gopher (and be responsible for returning them)? Is it PC or Mac and do you have the necessary connections? Do you need an internet connection? Do you know how to connect to your electronic patient records system on the fly if needed during the talk?
- **Know your audience.** Is it mostly people at your training level? Are there going to be experts in the field present? Are there going to be other disciplines present (pathology, radiology, GI, oncology, palliative etc. as well as other allied health team members such as nurses and therapists)?

- **For case presentations, review the details thoroughly.** Who (staff and residents) participated in the care of this patient? Are they going to be in attendance? If so, you may be able to ask for their input before and during your presentation. Take the time to retrieve patient files and review all of them (including nurses notes, ward notes, operative reports, and pathology reports). You should know more than anyone else in the room about this case.
- **Do not bite off more than you can chew.** It may be better to answer a focused question rather than trying to completely review or summarize a large topic. It may also be preferable to focus on a new or emerging topic, and be able to cover most of the literature on it by virtue of it being small. Check with more senior residents or staff to find out if you are on the right track, or if your scope should be narrowed.
- **Think of what questions might be asked of you beforehand.** Prepare an answer for the likely questions, and know if you will have backup in the audience.
- **Practice what you are going to say, out loud, as many times as possible until you feel confident.** As you practice, you should not find yourself apologizing for something. Eg. "Sorry the picture is blurry, sorry the font is too small, sorry this slide is a little busy..." By practicing beforehand, you can fix those foreseeable problems.

NUTS AND BOLTS OF SLIDE-MAKING:

- **Slides should be visual aids, not a script.** People read faster than you can speak, and if people are reading, they are not going to be listening to you. Keep the text on slides to a minimum (eg. suggested rule of "max 7 words per line, max 7 lines per slide").
- **Try to limit to 3 to 4 points per slide.** Try to reveal the information to your audience in stepwise fashion – build some suspense.
- **The format should not be a distraction in itself.** Templates, while attractive, require more processing before the message is understood. Avoid using any background at all. Use the same font throughout.

- **Research on the topic suggests keeping slide font to no smaller than 24 point.**
- **Spell check all slides.** Even one spelling mistake is distracting and can send the message you are careless, whether that is fair or not. Get a friend to proofread your slides as well as using the spell check software.
- **Avoid abbreviations.** Again, there may be audience members who aren't familiar with the abbreviations, don't alienate them.
- **A picture speaks a thousand words.** Don't underestimate the visual interest that intraoperative photos, or photos of the patient happy in follow-up, can add. Always obtain the best quality radiology images you can, and take the time to review them with the Radiology staff before you are asked to explain, "Where is that lymph node exactly?" Image slides should stand alone, and the image should be as large as possible, occupying the whole screen with only the minimum of labels. Remove any identifying patient information beforehand.
- **Incorporate videos if possible.** Find procedures online or record your own!
- **Anticipate questions on a premade slide.** Have a slide ready to present when you answer a particular question to show you were prepared to discuss certain points further.

ON THE DAY:

- **Remind your staff and senior residents you are presenting today.** Remember it's always easier to scrub in than scrub out of a case! Help your team manage the day's work by dividing up responsibilities keeping your presentation in mind.
- **Make sure you are on time.** Plan to arrive at least 10 minutes before you are scheduled to start to set up A/V, grab a cup of coffee or water, and settle your nerves.
- **Bring multiple backups of your talk.** Email a copy of it to yourself, store a copy on an online storage website, bring a key, bring your laptop.
- **Speak clearly, concisely, and loudly enough to be heard by everyone.** Don't get flustered if you're interrupted.

- **If you stumble, pause to collect your thoughts, and continue.** Repeated apologies only bring attention to the error.
- **Admit if you don't know.** Do not make up an answer to a question or make an excuse why you cannot answer. Offer to find an answer if that appears to be required.
- **Use humour with caution.** It may be too risky depending on the circumstances and not worth losing face. If you're not sure, bounce it off a senior resident or staff beforehand.
- **If you open an issue, close it.** For example, if you say, "The patient had a lumpectomy for DCIS 10 years ago," your next sentence should be, "and she has had no symptoms of breast disease since that time." Do not leave your listeners wondering about the breast cancer when you move onto the next topic.
- **Laboratory values should be dismissed as normal whenever possible.** Don't waste everyone's time spelling out all the irrelevant electrolytes.
- **Use a pointer.** This can be as simple as using the mouse on the computer. If you prefer a laser pointer, use it sparingly, and rest your arm on the podium to avoid annoying jiggling.

AFTER THE DAY:

- **Ask for feedback.** Learn as much as you can for next time. Distribute any papers or answer any questions that you may have promised to find the answer to.

NATIONAL EXAMS

LMCC II:

The clinical version of the LMCC I. Mandatory for all Canadian residents. Price: $2470 (if on time). Deadlines: January 30 for the Spring exam; June 30 for the Fall exam. http://mcc.ca/examinations/mccqe-part-ii/

Preparation suggestions: old case scenarios and Toronto Notes. There seems to be a lot of repetition from old exams.

Surgical Foundations:

All surgical residents must complete. Usually it's done in second year, but can be delayed if necessary. Yearly sitting in April. You must apply for assessment of training (Deadline: April 30 for the following Spring exam; Price: $645 (if on time). They then email you the following November with another registration form and ask for fees for the exam (Deadline: February 1 for upcoming April exam; Price: $780). http://www.royalcollege.ca/rc/faces/oracle/webcenter/portalapp/pages/viewDocument.jspx?document_id=TZTEST3RCPSCED002007&_afrLoop=27368252662282266&_afrWindowMode=0&_afrWindowId=null#!%40%40%3F_afrWindowId%3Dnull%26document_id%3DTZTEST3RCPSCED002007%26_afrLoop%3D27368252662282266%26_afrWindowMode%3D0%26_adf.ctrl-state%3D14p89guh1n_13

Preparation suggestions: form a group and practice together. Practice Questions are very useful, and widely available from upper year residents; read around them to find the answers. See textbook section for suggested reading. There is often repetition noted from previous exams.

Royal College Exam:

Written early May in various centres; oral component mid-June in Ottawa. Deadlines: Apply for assessment of training the year before (deadline end of April for the next year's exams; Price: $630) AND THEN Registration Form (deadline: Feb 1 of year of exam; Price: $3400) http://www.royalcollege.ca/portal/page/portal/rc/common/documents/credentials/canadian_residency_training_application_e.pdf

Preparation: form a study group and meet regularly. Divide up material into subjects and pick appropriate readings. Go through subjects one at a time (eg: liver, breast, colorectal, etc.). NO CRAM STUDYING! Participate in mock orals and start as early as second year.

CAGS Exam:

This is a national exam taken by all residents in General Surgery, in every year of residency training, usually sometime in February. It is a multiple-choice exam. Purposes include preparation for the final Royal College exam and measuring progress in training – marks may be compared across your own years, and within your year's cohort.

A NOTE ON LOUPES

Why buy surgical loupes?

There's a reason why the experienced surgeon operating across from you is wearing unfashionable, "Buddy Holly"-style glasses. If she has to wear loupes to perform this operation, why shouldn't you too?

The main advantage of surgical loupes, in addition to enabling more participation in an exciting surgery, is the alleviation of eyestrain by enlarging the image. The expectation to buy loupes varies by program. Check with other residents to see if you are encouraged to have loupes as a trainee.

How does one choose surgical loupes?

The most important aspect in choosing surgical loupes is the **magnification**. The amount of magnification determines the size of the image viewed through the loupe. For most simple surgical procedures, and for most beginner trainees, loupes with a magnification of 2.5x or 3.0x is sufficient. More delicate and complicated surgeries require a magnification of 3.5x-4.5x. Microsurgery usually demands magnification of 5.0x-6.0x.

In choosing the magnification of your surgical loupes, remember that both **depth of field** (the amount of depth that is in focus when viewing the object through the loupe), and the **field of view** (the area that is in focus when viewed through the loupe), are both compromised with higher magnifications. In addition, loupes are heavier with higher magnifications. The weight of loupes can cause a host of annoyances including post-auricular pain, slippage of the loupes down the nasal bridge, and discomfort on the nasal bridge.

Other factors to consider include flip-up versus a fixed lens system, headband versus glasses, prescription lenses, and, most importantly, frame design! There is no right or wrong choice amongst these options; it all depends on personal preferences. One thing to remember, however, is that the headband surgical loupes prohibit wearing a surgical headlamp. When choosing your surgical loupes, balance your current trainee needs with your potential future career needs.

RESEARCH

What are some common problems with surgical loupes?

The loupes constantly slip down the nose. Most surgical loupes come with an earpiece to tighten behind the head. Another option is to tape the brow bar of the glass frame to your forehead.

The loupes are fogging. Breathing into the mask can often fog loupes or masks. One effective strategy is to the tape the top part of the mask to the skin to create a barrier.

The loupes cause post-auricular pain. The higher the magnification, the heavier the loupes. Consider purchasing soft padding for the earpieces.

The loupes are not appropriate to your working distance or cause neck and back strain. Ensure that the company from which you purchase your surgical loupes meets with you and measures the loupes to fit your face and your needs.

To facilitate an informed decision, we suggest perusing the following article:

Baker, J., Meals, R. (1996). A Practical Guide to Surgical Loupes.*J Hand Surg (Am*), 22 (6): 967-74.

Why do research?

Personal enjoyment and curiosity are the driving forces for most researchers, but there are also a number of fringe benefits:

- Research offers a unique learning opportunity. In daily clinical practice, problems about how to offer the best treatment to our patients are most often found in textbooks or the published literature. Research is about delving into the unknown. The mindset is completely different, though we are uniquely equipped as clinicians to ask the important questions.

- Research is about learning how to answer questions that have yet to be answered. This involves creative thinking and applying new ideas.

- You will learn how to exchange ideas, formulate a scientific question and present data. There is no better way to understand the literature that guides the future of medicine and current patient care than to participate in producing that very literature.

- It is an opportunity to explore academic medicine and will help you make decisions about what type of career you would like to pursue. It is an exceptional chance to have dedicated time towards building your academic capital that will serve you for the remainder of your career.

- It is a time when your pager will not be ringing quite as often as usual!

- In the end, the ultimate goal is to generate new medical knowledge and improve patient care.

Research branches

- Basic science
- Translational
- Clinical
- Public health
- Education
- Administration
- Law/Ethics
- Epidemiology

Choosing your supervisor

This is one of the most important decisions you will have to make with regards to research. It is worth your time to meet with as many potential supervisors as you can so that you can make an educated decision. Your relationship with your supervisor will most likely dictate the quality of your research experience.

It is important for you to feel inspired by the project and for the project to be relevant to your career goals. However, one must understand that the topic of your research project often does not mesh exactly with what your ultimate specialty or research interest will become. For example, a research project in transplant immunology could be useful to a future career in cancer research or critical care in addition to the obvious field of transplant surgery. Part of what one learns from doing research is how to translate knowledge from one field to another. The greatest discoveries come from bringing new ideas from previously unrelated fields to produce a new paradigm.

You should be sure that your supervisor has adequate funds and expertise to lead you through the proposed project. You can figure this out by simply asking about the funding situation. Expertise can be determined by previous publications and the involvement of collaborators. It is a good idea to make sure that the research team you choose to join has regular meetings where progress is tracked and feedback is offered. If possible, we highly recommend that you attend a few 'lab meetings' prior to choosing your supervisor.

Finding funds to pay for lunch (salary awards)

To obtain dedicated research time it is important to figure out who will pay your salary. As soon, as you leave your regular residency for more than 6 months most provinces will consider that you are no longer providing a service that is worth being remunerated.

Many programs in Canada have internal funds to allow residents to pursue dedicated research. However, these funds can be limited. It is therefore important to apply for external funding. If you manage to get external funds, you will not only be able to pay for lunch, but you will also benefit from the prestige of peer-reviewed funding. It is a great way to validate the importance of your project and begin building your academic capital.

It will be worthwhile to discuss research with a research chair in your program. Some programs have a Surgeon Scientist Program, which may fund you as a resident to complete a M.Sc. or Ph.D. This is tied in with the accredited Royal College of Physicians and Surgeons Clinician Investigator Program at some schools. Find out if this program exists where you are. See http://www.royalcollege.ca/rcsite/education-strategy-accreditation/innovations-development/initiatives/clinician-scientist-e.

Below are a few key sources of external funding. Keep in mind that there may be other specialty specific funding agencies not listed. Make sure to ask your supervisor about all possible funding opportunities and apply to as many as you can. The process of applying for these types of grants will help you understand your project better and will help you perfect your writing skills.

National and international funding sources:

Canadian Institute of Health Research (CIHR)

- Masters and doctoral awards. Application deadline changes annually
- Fellowship award. Application deadline changes annually

Candidates must choose one or the other. Those with a strong research background and/or previous graduate work may be competitive for the Fellowship award. Those with little or no research experience are probably best suited to the Master's award.

https://www.researchnet-recherchenet.ca/rnr16/search.do?fodAgency=CIHR&fodLanguage=E&view=currentOpps

Surgical society sources:

American College of Surgeons

- Resident Research Scholarships. (2 year scholarship)

http://www.facs.org/memberservices/research.html

Association of Academic Surgeons

- Research Fellowship Award

https://www.aasurg.org/awards/

Society of University Surgeons

- SUS Surgical Research Fellowship Award.

http://www.susweb.org/sus-resident-scholar-award

Society of Gastrointestinal and Endoscopic Surgeons

-SAGES research grant

http://www.sages.org/projects/research-grants/

Provincial granting sources:
There are many provincial grants available, however for the most accurate and timely information you may wish to seek out your Research/Program Director.

Getting your own operating grants

Regardless of the type of research you plan on doing, having some money to pay for it is essential. Whether you will be conducting a nation-wide survey or managing a mouse colony, research is far from being a cheap endeavour. It is primarily your supervisor's job to secure funds for the work, but some granting agencies allow you to apply as a resident with your supervisor as a co-investigator. Writing this type of grant is a challenging experience that will test whether you really understand your topic. It is a fun exercise to figure out how to design strong experiments that will best answer your question. Beyond adding to your academic capital, obtaining one of these grants lends credence to the validity of your research. Even when the odds seem slim, any chance is better than none, and no one likes to see mice starve.

Here is a non-exhaustive list of potential grant competitions (please consult the relevant website for up to date information):

Surgical society grants:

- Canadian Surgical Research Fund
- http://www.cags-accg.ca/index.php?page=113
    - Value = $10,000 x 1 year
    - Application deadline: June/July each year
- SAGES Research Grant
- http://www.sages.org/projects/research-grants/grant-begin/
    - Value = up to $30,000 x 1 year
    - Application deadline November each year
- Canadian Society of Colon and Rectal Surgeons Operating Grant (http://cscrs.ca/research/
    - Value = $10,000 x 1 year
    - Application deadline: June each year

Royal College grants:

- Medical Education Research Grant
- http://www.royalcollege.ca/rcsite/awards-grants-e
    - Value = $50,000 over a maximum of 3 years, maximum of $25,000/year
    - Up to $10,000 in salary support
    - Application deadline: March each year

Online Resources for Grants and Proposal Writing:
CIHR IG: Guidebook for New Principal Investigators:
http://www.cihr-irsc.gc.ca/e/27491.html

NIH Grant Writing Tip Sheets
http://grants.nih.gov/grants/grant_tips.htm

How to Write a Good Proposal
http://fhs.mcmaster.ca/healthresearch/guide_grantsmanship.html

Grant Writing Resources
http://www.schulich.uwo.ca/research/services/grant_writing_resources.html

Online Funding Resources
Royal College of Physicians and Surgeons of Canada Awards and Grants
http://www.royalcollege.ca/rcsite/awards-grants-e

Community of Science
http://www.cos.com/

Physicians' Services Inc Foundation, Resident Research Program
http://www.psifoundation.org/ForApplicants/ResidentResearchGrants.php

Canadian Surgical Research Fund
http://www.cags-accg.ca/index.php?page=112

Canadian Society for Clinical Investigation
http://www.csci-scrc.ca

American Society of Colon and Rectal Surgeons
https://www.fascrs.org/educational-grants-and-awards

American College of Surgeons Resident Research Scholarships
http://www.facs.org/memberservices/acsresident.html

NSERC
http://www.nserc-crsng.gc.ca/Media-Media/Index_eng.asp

Useful skills for research

1. **Writing an Abstract for a Conference**

Abstract writing is a crucial skill. Not only is it expected for all manuscripts and publications in scientific journals, it gets you to conferences and meetings.

The following are general tips for preparing an abstract:

- Read the instructions. Simple, yet crucial! Conferences and meetings usually have a very specific format required. This may include things as specific as **bolding**, *italicizing*, and CAPS font.
    - What to look for in the instructions:
        - What is the word length?
        - What format is accepted (Word, electronic, paper)?
        - Can I include references?
        - Can I include figures?
        - Should there be headings (Background, Methods, Results, Conclusion) or should the abstract be one paragraph?
        - Should I include author titles and/or affiliations?
        - What is the deadline?
        - Can I submit more than one abstract?
        - Can I submit an abstract that has been previously presented?
- Be fair to the organization. Do not submit an abstract if you will not be able to attend the meeting.
- Read abstracts from the conference from previous years. These are often published on the organization's website or in their affiliated journal. Use these as your guide.
- Keep within the specified word length. If not specified, 200 to 350 words is a general suggestion.
- Use the same language and technical terms as if you were writing a scientific paper. Abstracts are not lay summaries.
- The title should be descriptive, but short and concise. It should give the reader a general knowledge of the population and purpose of the study.
- Do not guess results. In other words, do not submit an abstract for a project you have not completed.
- Make the abstract informative and interesting, yet concise. Stay within the format of:
    - Background
    - Objective
    - Methods
    - Results
    - Conclusion
- If space is at a premium, cut the background section out or to a minimum.
- Have your supervisor review your abstract for quality and validity.
- Prepare well in advance of the deadline to give yourself plenty time for editing after receiving feedback.

2. Poster preparation

General tips:

- Sketch the poster design in advance
- Arrange in columns; this allows for easy reading by those walking by
- Common dimensions for posters are: 42 x 42 inches, 42 x 48 inches, or 42 x 52 inches
- Aim for: 20-25% text, 40-45% graphics, 30-40% empty space
- Use bullet points and short, abbreviated sentences to highlight discrete ideas
- Title all graphics and label data lines
- Double-space all text
- Make sure text is readable from 1 to 2 meters away
- A note about fonts: for title, use the largest font that the length of your title will allow; section headings 36-42 pt, supporting text 24-28 pt. Always use simple fonts - sans serif fonts are generally better.
- A note about colours: use soft, neutrals for the background, as bright colours can
  be overly harsh and tiresome after a day reading posters
- If you're using dark photos, use a light background colour; use darker backgrounds for light photos
- Ensure contrast with text and graphics and try to use a colour scheme to tie the poster together
- If space permits, use the author's first names. This will facilitate interactions between you and your audience. Leave out middle initials

ANATOMY OF A POSTER

Introduction: Keep it brief - a few sentences on what you've tried to do and why it is important.

Abstract: Check the conference/symposium guidelines to see whether an abstract is required. If it's not required and if you've managed space on the poster well, an abstract is likely unnecessary.

Conclusions/Discussion: This will appear on the bottom-left, note only the most important findings, recommendations, and/or suggestions for future study.

Methods and Results: Include research design, setting, number of patients enrolled,
selection criteria. May also include a description of the intervention, how outcomes are measured, and the method of statistical analysis. Try to use figures, simple tables, and pictures to package and highlight key points.

Graphics: Should dominate the poster. Use bright colours, include only the most important information.

CONFERENCES

Your audience should be able to grasp your project with a quick scan. If they have questions, you'll be there to fill in any details.

Online resources:
http://www.acponline.org/residents_fellows/competitions/abstract/prepare/pos_pres.htm
http://gradschool.unc.edu/student/postertips.html

They like me, they really like me! Or not. Dealing with Reviewers Comments

The most important thing when dealing with reviewers comments is to address each comment specifically and do not ignore any comments no matter how absurd they seem to you. Often reviewers may make comments that seem out of place or superfluous but addressing them in an itemized fashion is the easiest and most efficient way to proceed. Often the reviewer will give you a paragraph of comments and it can be difficult to discern what they are looking for but if you break it down into specific points then it is easier to deal with each comment in turn.

It is always easier to make the changes suggested by the reviewers unless they have misinterpreted the items they wish to change. It is not worth fighting with the reviewers unless you feel they have made an error in interpreting your work. Often reviewers read manuscripts quickly and it is possible that they have made an error. If this is the case, point it out in a polite and diplomatic way and suggest the proper interpretation.

Reviewers may suggest a change that is already present in the manuscript. This can be frustrating, indicating that they did not read the work carefully. If this is the case, don't point out there negligence, instead simply state that the paper already "emphasizes" the change they wanted you to make.

Always keep a flattering and polite tone with the reviewers when responding to their comments. If a reviewer has made an insightful and astute comment, then let them know. Always end by thanking the reviewer for their time and for making the manuscript better.

Seeing a paper through the submission process can be a long and frustrating experience but, in general, reviewers' comments can often strengthen your paper so always remain courteous and keep an open mind when responding

Conferences are a great opportunity to present research, gather information on the latest and greatest technology and guidelines, and of course meet up with friends from medical school and foster relationships with surgical colleagues across Canada and internationally. A vast number of conferences exist. Most are subspecialty oriented but the most important one for Canadian residents remains the annual CAGS Canadian Surgical Forum (CSF). Here are a variety of conferences to check out for 2016/2017:

CAGS: Canadian Surgical Forum (September 14- 16, 2017, Victoria)

CATS: Candian Association of Thoracic Surgeons (September 14- 16, 2017, Victoria)

CAPS: Canadian Association of Paediatric Surgeons (October 5-7, 2017, Banff)

ACS: American College of Surgeons (TBA)

APSA: American Pediatric Surgery Association (May 4-7, 2017, Hollywood Florida)

Critical Care Canada forum (Oct 1-4, 2017, Toronto)

Trauma, Critical Care & Acute Care Surgery (usually March, Las Vegas)

SAGES: Society of Gastrointestinal and Endoscopic Surgeons (March 22-25, 2017, Houston)

AHPBA: Americas Hepatico-Pancreatico-Biliary Association (March 29-April 2, 2017, Miami)

ASCRS: American Society of Colon & Rectal Surgeons (June 10-14, 2017, Seattle)

STS: Society of Thoracic Surgeons (Jan 27-31, 2018, Fort Lauderdale)

AATS: American Association for Thoracic Surgery (April 29-May 3, 2017, Boston)

SSO: Society Surgical Oncology (March 15-18, 2017, Seattle)

AAES: American Association Endocrine Surgeons (April 2-4, 2017: Orlando)

Mentorship

It helps to find and talk to an attending that you get along with and find approachable about any problems or issues that you may encounter during residency. The mere act of sharing your concerns and getting a different perspective can go a long way in helping you deal with them. Remember you are not the first resident to go through a surgical residency. If there are issues troubling you, chances are that someone more senior to you has seen or dealt with them before. Apprenticeship has long been the cornerstone of surgical training, and mentorship relationships often evolve between surgeon and resident in a formal or informal setting.

Studies consistently show that role models and mentors are among the crucial top factors influencing a career choice in surgery. This is true of medical students and residents making their final specialty decisions. Mentors may play two broad roles in your residency. The first is the career development role through sponsorship, coaching, challenging knowledge, and providing exposure to important career networks. The second is the more social or personal role of role modeling, counselling, lifestyle advice, and friendship.

When you are new to a program, it may be difficult to know “who’s who” in the department and who to turn to for guidance. Some mentorships develop naturally through striking up a conversation with a surgeon with a career you aspire to or with common interests. Don’t be afraid to approach and ask questions of a surgeon you find interesting. If you would like someone to talk to but aren’t sure where to turn your Program Director is a great start to link you with someone who shares your interests or personal situation. Also ask if there is a formal mentorship program or matching process at your institution.

Lastly, remember to pay it forward. Medical students are quietly watching us throughout their surgical rotation. Take some time to discuss career goals and the life of a surgeon with all your medical students. Even as a junior resident, medical students look to you as a surgical role model and potential mentor. Utilize one-on-one time as mentoring opportunities for keen medical students… it may have a great impact on their career choice!

Most programs will offer you a chance to do electives during your residency. These blocks provide you with the opportunity to work in a different environment or institution than where you regularly train and therefore become familiar with different surgeons and techniques and opportunities. *For electives, it is best to contact the surgeon directly. It is possible, however, to arrange electives through the program administrators who will set you up with a surgeon supervisor. You will need a supervisor to attain a provincial license if doing electives out of province.*

Electives are great opportunities for meeting people for potential fellowships as well as jobs in the future. Most of us have been told that you should probably have an idea of whether or not you might want to pursue a fellowship by the beginning of your fourth year.

Here we outline ways to arrange electives at a variety of universities across Canada and a list of current fellowship programs in Canada, however, there are many more cropping up all the time and more in the US and abroad if you are interested.

University of British Columbia

- Contact Eleni Tsakumis, program administrator, at eleni.tsakumis@vch.ca or 604-875-4133.
- Fellowships offered: Trauma, MIS, HPB, Thoracics, Colorectal surgery, & Pediatric surgery

University of Alberta

- All electives have to go through the PGME office. Check out their policies at http://www.med.ualberta.ca/programs/residency/postgraduateprograms/incoming
- Fellowships offered: ACS, MIS/Bariatrics, HPB. Find contacts at http://www.generalsurgery.med.ualberta.ca/ed-for-fel.html

University of Calgary

- Program Administrator: Omran Mir
- Email: omran.mir@albertahealthservices.ca
- Fellowships offered: Endocrine Surgery (PD: Dr. Janice Pasieka, Janice.Pasieka@albertahealthservices.ca), Surgical Oncology (PD: Dr. Greg McKinnon, mckinnon@ucalgary.ca), Hepatobiliary (PD: Dr. Chad Ball, ball.chad@gamil.com), Colorectal (PD: Dr. Don Buie, wdbuie@ucalgary.ca), Trauma (PD: Dr. RohanLall, Rohan.Lall@albertahealthservices.ca), Upper GI surgery (PD: Dr. Neal Church, Neal.Church@albertahealthservices.ca), Vascular (PD: Dr. Paul Petrasek, Paul.Petrasek@albertahealthservices.ca), Thoracics (PD: Dr. Sean Grondin, Sean.Grondin@albertahealthservices.ca), Paediatric Surgery (PD: Dr Andrew Wong, wongal87@yahoo.ca)

University of Saskatchewan

Program Director: Dr. Paul Hayes

Administrator: Karen Bader
Phone: (306) 844-1091
Fax: (306) 844-1522
Email: karen.bader@usask.ca

University of Manitoba

- Academic administrator: Melissa Franzmann
- Phone: (204) 787-8823
- Fax: (204) 940 8970
- Email: mfranzmann@exchange.hsc.mb.ca
- Fellowships offered: MIS (PD: Dr. Ashley Vergis, avergis@sbgh.mb.ca), Vascular Surgery (PD: Dr. Joshua Koulack, JKoulack@exchange.hsc.mb.ca), Thoracics (PD: Dr. Gordon Buduhan, gbuduhan@gmail.com), Pediatric Surgery (Contact Dr. BJ Hancock, BJHancock@exchange.hsc.mb.ca), Colorectal Surgery (contact Dr. Ben Yip, byip@sbgh.mb.ca), Surgical Oncology (contact Dr. Pamela Hebbard, pamelahebbard@gmail.com)

Northern Ontario School of Medicine

- Contact Cyndy Mackenzie program coordinator at cmackenzie@nosm.ca. She is able to direct residents to contacts at hospitals throughout Northern Ontario.

University of Western Ontario

- Contact Christine Ward, Program Administrator at Christine.ward@lhsc.on.ca
- Fellowships offered: Transplant/HPB (PD: Dr. Doug Quan, douglas.quan@lhsc.on.ca), MIS (PD: Dr. Chris Schlachta, Christopher.schlachta@lhsc.on.ca), Breast (PD: Dr. Muriel Brackstone, murielbrackstone@lhsc.on.ca)

McMaster University

- Program director: Dr. Michael Marcaccio
- Contact: Katie Niblock(program assistant)
- Phone: (905) 521-2100 x 73932
- Email: niblock@mcmaster.ca
- (Current electives offered are MIS through Dr. Anvari's office at http://fhs.mcmaster.ca/generalsurgery/faculty/anvari_mehran.html and CMAS.
- Fellowships offered: MIS – CMAS http://www.cmas.ca/fellowships.aspx, Trauma (contact Barb Klassen or Dr. Faidi), vascular http://fhs.mcmaster.ca/generalsurgery/faculty/faidi_samir.html)

University of Toronto

- Program director: Dr. Najma Ahmed (ahmedn@smh.ca)
- Administrative assistant: Stacy Palmer (palmers@smh.ca)
- Contact the PGME electives program at http://electives.pgmeutoronto.ca/electives

And PGME application instructions for electives, fellowships training, observerships and residency at http://www.pgme.utoronto.ca/content/applicants

- Fellowships offered: breast, colorectal, surgonc, HPB, MIS, peds, transplant, trauma/ACS
- http://generalsurgery.utoronto.ca/edu/fellow.htm

Queen's University

- Contact Jeanine MacRow, Program Coordinator (macrowj@kgh.kari.net, 613-549-6666 x. 3678)
- Fellowships: Critical Care Medicine (Contact Kim Telford, program assistant, telfordk@kgh.kari.net, PD: Dr. David Messenger, david.messenger@queensu.ca)

University of Ottawa

- Contact Katie Condon at kcondon@toh.on.ca
- Fellowships offered: Colorectal (PD: Dr. Husein Moloo, hmoloo@toh.on.ca), HPB (Dr. Guillaume Martel, PD, gmartel@toh.on.ca), Pediatric Surgery (PD: Dr. Kyle COWAN, kcowan@cheo.on,ca) , MIS/Bariatrics (PD: Dr. Husein Moloo, hmoloo@toh.on.ca), Vascular (PD: Dr. Tim Brandys, tbrandys@ottawahospital.on.ca), Thoracics (PD: Dr. Donna Maziak, dmaziak@toh.on.ca), Critical Care (PD: Dr. Rakesh Patel, rpatel@toh.on.ca), trauma (PD: Dr. JD Yelle, jdyelle@ottawahospital.on.ca)

McGill University

- Contact Rita Piccioni at rita.piccioni@muhc.mcgill.ca or Jessica at generalsurgery.med@mcgill.ca
- Fellowship information is available at https://www.mcgill.ca/pgme/admissions/prospective-fellows
  (under General Surgery)
- MIS, Bariatrics, HPB

Dalhousie University

- Electives can be set up through Sheila Reid:sheila.reid@dal.ca
- Fellowships in MIS/Advance Endoscopy/HPB and Transplant/Pediatric General Surgery
  https://fellowshipcouncil.org/fellowship-programs/

Memorial University of Newfoundland

- Contact program administrators, Cheryl Perkins and Carol at Surgical.Education@med.mun.ca

University de Sherbrooke

- Program director: Dr. Anne Meziat-Burdin
- Administrator: Christine.Murray@USherbrooke.ca

- Phone: 819 346-1110, ext. 14483
- Fax: (819)- 820-6877

FELLOWSHIPS AFTER GENERAL SURGERY

General Surgery can be a stepping-stone to a variety of fellowship opportunities. There is more detailed information for residents about surgical fellowships in Canada on the Residents portion of the CAGS website (www.cags-accg.ca; look under residents and applying for fellowships.)
Be sure to check the dates for application for these fellowships – often the process to apply is in fourth year or the year prior to your final year of residency.

Fellowship Council offers fellowships in Advanced GI MIS, Advanced GI, Flexible Endoscopy, Bariatric, HPB and/or a non-ACGME Colorectal and Thoracic Surgery within Canada and United States. You apply in your PGY4 year to start fellowship after PGY5. Application opens mid December each year and its deadline is March/April following year. Interviews occur from April to May and the rank list must be submitted by end of May. Match results are available mid June. https://fellowshipcouncil.org

Other fellowships include but are not limited to:

Acute Care Emergency Surgery
Bariatric Surgery
Breast Surgery
Colorectal Surgery
Head and Neck Surgical Oncology
Hepatopancreaticobiliary
Transplant
Minimally Invasive Surgery
Pediatric Surgery
Surgical Oncology
Thoracic Surgery
Trauma Surgery
Vascular Surgery
Intensive Care/Critical Care

Here is some information re: applications to the programs as well as organizations associated with those subspecialties. This is not a complete list, but will hopefully provide you with more information.

Thoracics:

- Apply to individual programs across the country (state where they are offered) although this may be changing soon.
- CATS: Canadian Association of Thoracic Surgeons, AATS: American Association of Thoracic Surgeons (www.canadianthoracicsurgeons.ca; www.aats.org)

Vascular Surgery:

- Apply to individual programs, interviews should be in a similar time period and offers should all be made on May 15. Many programs do not adhere to these guidelines, though. In US, vascular program admission is through a match through the nrmp. (www.nrmp.org)
- Of note, many programs are moving away from offering vascular surgery fellowships due to the introduction of direct entry programs into vascular surgery
- CSVS: Canadian Society of Vascular Surgery, SVS: Society of Vascular Surgeons (US) (www.canadianvascular.ca; www.vascularweb.org)

Pediatric Surgery:

- Application is through a North American fellowship match administered through the NRMP (National Residency Matching Program) in the US (www.nrmp.org)
- CAPS: Canadian Association of Paediatric Surgeons (www.caps.ca)

Surgical Oncology:

- Application is through a match through the Society of Surgical Oncology
- SSO: Society of Surgical Oncology (www.surgonc.org)

Colorectal:

- Application is through nrmp in the US and application is to individual programs in Canada (www.nrmp.org)
- ASCRS, CSCRS (www.fascrs.org; www.cscrs.ca)

Breast surgery:

- Apply through a match through the Society of Surgical Oncology (www.surgonc.org)

Transplant:

- Apply through a match program through the American Society of Transplant Surgeons (www.asts.org)

MIS/bariatrics:

- Application is through a match through the Fellowship Council (www.fellowshipcouncil.org)
- Match in 4th year of residency
- SAGES (Society of American Gastrointestinal and Endoscopic Surgeons) (www.sages.org)

Hepatopancreaticobiliary:

- Application is through the Fellowship Council (www.fellowshipcouncil.org)
- AHPBA (Americas HepatoPancreato Biliary Association) and IHPBA (International HPB Association) (www.ahpba.org and www.ihpba.org)

Trauma:

- Application in Canada is through individual programs.

Critical Care:

- Application is a match through CARMS (www.carms.ca)

Endocrine Surgery:

- Application is a match through the American Association of Endocrine Surgeons (www.endocrinesurgery.org)

Acute care surgery:

- Application is to individual programs in Canada

Head and Neck:

- Application is through a match through the American Head and Neck Society (www.ahns.info)

FINDING A JOB!

Times seem to be tight at the moment for job finding as a General Surgeon in Canada. This has become such a current issue that task forces have been created at the Royal College and other stakeholder levels. There is obviously no one solution to the problem, and most jobs continue to be found by being in the right place at the right time and by word of mouth and contacts but we felt it may be helpful to offer some tips. It is never too early to begin to think about what you want to do at the end of residency and to begin to make contacts.

- Find a mentor
- Keep track of all extracurricular activities/groups you are involved with for your resume
- Do research – important for fellowships, which are important for jobs. Try to get published as the first author.
- Several websites are devoted to finding a job……
    - CAIR TIPS page (www.cair.ca)
    - Links to job websites in all provinces
    - CAGS website (www.cags-accg.ca)
    - OAGS website for jobs in Ontario (www.oags.org)
    - Other specialty organizations and American College of Surgeons (www.facs.org)
- Ask staff about how their careers developed
- Use your program directors and other staff to put in a word for you at a place/ hospital you would like to work at
- Do electives in hospitals you would like to work in, and ask them what they would need in the future for jobs (ask what type of specialty training they will require)

MILESTONES IN GENERAL SURGERY RESIDENCY

On all rotations and in every medical career it is important to base your practice on the CanMEDS Competencies, listed below. This is what all of our evaluations are based on, and really it comes in handy in difficult situations.

Medical Expert—read, read, read! Get to the OR and clinic as much as possible!
Communicator—this includes verbal/written communication between yourself and peers, juniors, staff and patients. **The number one root cause of a medical law suit —poor communication, as per the CMPA**
Manager—make sure you are organized before starting a rotation, arrive on time, and learn to multitask.
Professional—this applies to how you present yourself: dress, language and behaviour.
Scholar—teach those who are junior to you and stay up to date on literature.
Collaborator—use the resources of the multidisciplinary team to your advantage and make everyone's life easier!
Health Advocate—remember why we are all in this profession. Speak up if you have a concern regarding patient's best interests. Do so diplomatically however!

Our flexible guideline of EXPECTATIONS for residents throughout the years:

Reference:
Royal College of Physicians and Surgeons of Canada
http://www.royalcollege.ca/portal/page/portal/rc/canmeds

OPERATION	PGY 1-2	PGY 3-4	OPERATION	PGY 1-2	PGY 3-4
Exploratory Laparotomy	Assist/ Surgeon	Surgeon	Axillary LN dissection	Assist/ Surgeon	Surgeon
Exploratory Laparoscopy	Assist/ Surgeon	Surgeon	Thoracotomy	Surgeon	Surgeon
Laparoscopic Appendectomy	Surgeon	Surgeon	Lung resection	Assist/ Surgeon	Assist/ Surgeon
Open Appendectomy	Assist/ Surgeon	Surgeon	Vascular reconstruction	Assist	Assist/ Surgeon
Laparoscopic Cholecystectomy	Surgeon	Surgeon	Pelvic exenteration	Assist	Assist/ Surgeon
Open Cholecystectomy	Assist/ Surgeon	Surgeon	Low Anterior Resection	Assist/ Surgeon	Surgeon
Umbilical Hernia Repair	Surgeon	Surgeon	Abdominoperineal resection	Assist/ Surgeon	Assist/ Surgeon
Laparoscopic inguinal hernia repair	Assist/ Surgeon	Surgeon	Liver resection	Assist/ Surgeon	Assist/ Surgeon
Open inguinal hernia repair	Surgeon	Surgeon	Whipple Procedure	Assist/ Surgeon	Assist/ Surgeon
Lysis of Adhesions	Surgeon	Surgeon	Common Bile Duct Exploration	Assist	Assist/ Surgeon
Small bowel resection/ reanastamosis	Assist/ Surgeon	Surgeon	Thyroidectomy	Assist/ Surgeon	Surgeon
Colectomy (hemi/STC)	Assist/ Surgeon	Surgeon	Parathyroidectom y	Assist	Assist/ Surgeon
Breast Lumpectomy	Surgeon	Surgeon	Parotidectomy	Assist	Assist/ Surgeon
Mastectomy	Assist/ Surgeon	Surgeon	Transplant	Assist	Assist/ Surgeon

The list goes on…

Obviously most surgeries have a role for everybody (e.g. the junior opens and starts the case until it becomes too complex for their level, then the senior takes over). If the case becomes too difficult for that resident to continue or there are teaching points to share, then the fellow or staff may decide to take over.

Every case is a learning opportunity, even if it just serves to familiarize you with the name of the procedure for that specific disease entity. There is always something worth paying attention to, if you are attentive to find it: How is the more

experienced operator being a good assistant? What is the proper way to hold that instrument? Why has that particular suture and suture placement been chosen? Try paying explicit attention to certain "mundane" aspects of a case: tissue handling, instrument choice, positioning, exposure, etc. You will be surprised at what can be gained.

*Please note the level of responsibility for each operation is extremely hospital/rotation/university-dependent. By your PGY 5 year, you should be the main surgeon (with staff assistance as needed) in most cases, assuming they are not fellow-level/subspecialty cases. At the end of 5 years, we all come out just about the same.

INTERNATIONAL SURGERY

Keen to participate in an International Surgery elective? Many residents hope to incorporate an international experience into their residency training. Below are several great online resources available to help make this happen. This list is not exhaustive. Contribute your experiences to the CAGS Wiki Surgery site. Some schools also have departments set up specifically to facilitate these experiences – ask your Program Director for direction.

Resource Suggestions

Key Sites

Canadian Association of General Surgery (CAGS) International Surgery Committee

http://internationalsurgerycanada.com

- Facilitates CAGS members interested in the developing world
- Provides names of CAGS members interested in International Surgery.
- Details information on CAGS international collaborative surgical projects and several international initiatives of CAGS members.

American College of Surgeons (ACS) – Operation Giving Back

http://www.operationgivingback.facs.org

- Provides information to help surgeons and surgical residents find and organize volunteer opportunities aboard.

Academic Offices of International Surgery

Vancouver – Branch for International Surgery
http://www.internationalsurgery.ubc.ca

International Surgery Initiatives

Canadian Network for International Surgery (CNIS)

http://www.cnis.ca

- The world's largest organization of International Surgery.
- Runs programs in seven African countries that focus on surgical skills teaching, injury prevention, and safety promotion.

http://www.operationgivingback.facs.org/content2271.html

World Health Office (WHO)

http://www.who.int/surgery/publications/imeesc/en/index.html

- WHO recommendations for minimum standards in surgical care

PROFESSIONAL RESOURCES and RESIDENT ASSOCIATIONS

Links to resident associations

Newfoundland/Labrador: PAIRN: http://www.pairn.ca/home.aspx

Nova Scotia/New Brunswick/PEI: PARI-MP: www.parimp.ca

Quebec: FMRQ: www.fmrq.qc.ca

Ontario: PARO: www.pairo.org

Manitoba: PARIM: www.parim.org

Saskatchewan: PAIRS: www.usask.ca/pairs

Alberta: PARA: www.para-ab.ca

British Columbia: PAR-BC: http://www.par-bc.org

Professional associations

Canadian Medical Association: http://www.cma.ca
British Columbia Surgical Society: http://www.bcss.ca/
Alberta Medical Association: http://www.albertadoctors.org/
Saskatchewan Medical Association: http://www.sma.sk.ca/
Doctors Manitoba: http://www.docsmb.org/
Ontario Medical Association: www.oma.org
Ontario Association of General Surgeons: http://www.oags.org/
College des Medecins du Quebec: http://www.cmq.org/
New Brunswick Medical Society: http://www.nbms.nb.ca/
Doctors Nova Scotia: http://www.doctorsns.com/
Medical Society of Prince Edward Island: http://www.mspei.org/
Newfoundland and Labrador Medical Association: http://www.nlma.nl.ca

Links to Other Organizations of interest to General Surgery
American College of Surgeons: www.facs.org
Resident and Associate Society: www.facs.org/ras-acs/

Society of American Gastrointestinal and Endoscopic Surgeons: www.sages.org

American Society of Clinical Oncology: www.asco.org

Society of Surgical Oncology: www.surgonc.org

Also see fellowships section for further organizations